CFD-S400/S500

SERVICE MANUAL

Ver. 1.3 2005.09

US Model
CFD-S500
Canadian Model
E Model
CFD-S400

Photo: CFD-S500

CD Section	Model Name Using Similar Mechanism	CFD-S36
	CD Mechanism Type	KSM-213RDP
	Optical Pick-up Name	KSS-213R
TC Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	MF-S200

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS
POWER OUTPUT AND TOTAL HARMONIC DISTORTION
With 3.2-ohm loads, both channels driven from 150 - 6,300 Hz; rated 1.8 W per channel-minimum RMS power, with no more than 10% total harmonic distortion in AC operation.

Other Specifications
CD player section
System
Compact disc digital audio system
Laser diode properties
Material: GaAlAs
Wave length: 780 nm
Emission duration: Continuous
Laser output: Less than 44.6 μW
(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)
Spindle speed
200 r/min (rpm) to 500 r/min (rpm) (CLV)
Number of channels
2
Frequency response
20 - 20,000 Hz +1/–2 dB
Wow and flutter
Below measurable limit

Radio section
Frequency range
FM: 87.5 - 108 MHz
AM: 530 - 1,710 kHz
Antennas
FM: Telescopic antenna
AM: Built-in ferrite bar antenna

Cassette-corder section
Recording system
4-track 2 channel stereo
Fast winding time
Approx. 120 sec. with Sony cassette C-60
Frequency response
TYPE I (normal): 80 - 10,000 Hz

– Continued on next page –

CD RADIO CASSETTE-CORDER

9-873-982-04
2005I04-1
© 2005.09
Sony Corporation
Personal Audio Group
Published by Sony Engineering Corporation

SONY®

General

Speaker
Full range: 10 cm dia.,
3.2 ohms, cone type (2)
Outputs
Headphones jack (stereo minijack)
For 16 - 68 ohms impedance headphones
Power output
2.3 W + 2.3 W (at 3.2 ohms, 10% harmonic distortion)
Power requirements
For CD radio cassette-corder:
US, CND, E92, MX model:
120 V AC, 60 Hz
KR model:
220 V AC, 60 Hz
SP model:
230 V AC, 50 Hz
9 V DC, 6 size D (R20) batteries
For remote control:
3 V DC, 2 size AA (R6) batteries
Power consumption
AC 20 W
Battery life
For CD radio cassette-corder:

FM recording
Sony R20P: approx. 13.5 h
Sony alkaline LR20: approx. 20 h
Tape playback
Sony R20P: approx. 7.5 h
Sony alkaline LR20: approx. 15 h
CD playback
Sony R20P: approx. 2.5 h
Sony alkaline LR20: approx. 7 h

Dimensions
Approx. 386 × 166 × 252 mm (w/h/d)
(15 1/4 × 6 5/8 × 10 inches) (incl. projecting parts)
Mass
Approx. 3.3 kg (7 lb. 4 oz.) (incl. batteries)
Supplied accessories
AC power cord (1)
Remote control (RMT-CS400A) (1)
Headphones (1) (CFD-S500 only)

Design and specifications are subject to change without notice.

- Abbreviation
  CND : Canadian model
  E92 : AC 120V area in E model
  MX : Mexican model
  SP : Singapore model
  KR : Korean model

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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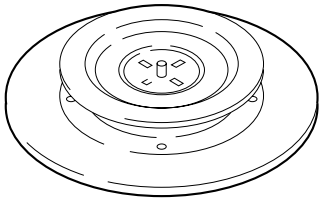
SECTION 1
SERVICING NOTES

CHUCK PLATE JIG ON REPAIRING

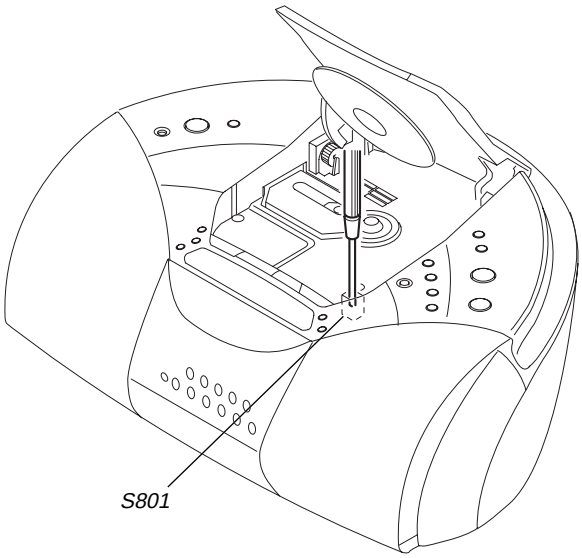
On repairing CD section, playing a disc without the lid (CD), use Chuck Plate Jig.

• Code number of Chuck Plate Jig: X-4918-255-1



LASER DIODE AND FOCUS SEARCH OPERATION CHECK

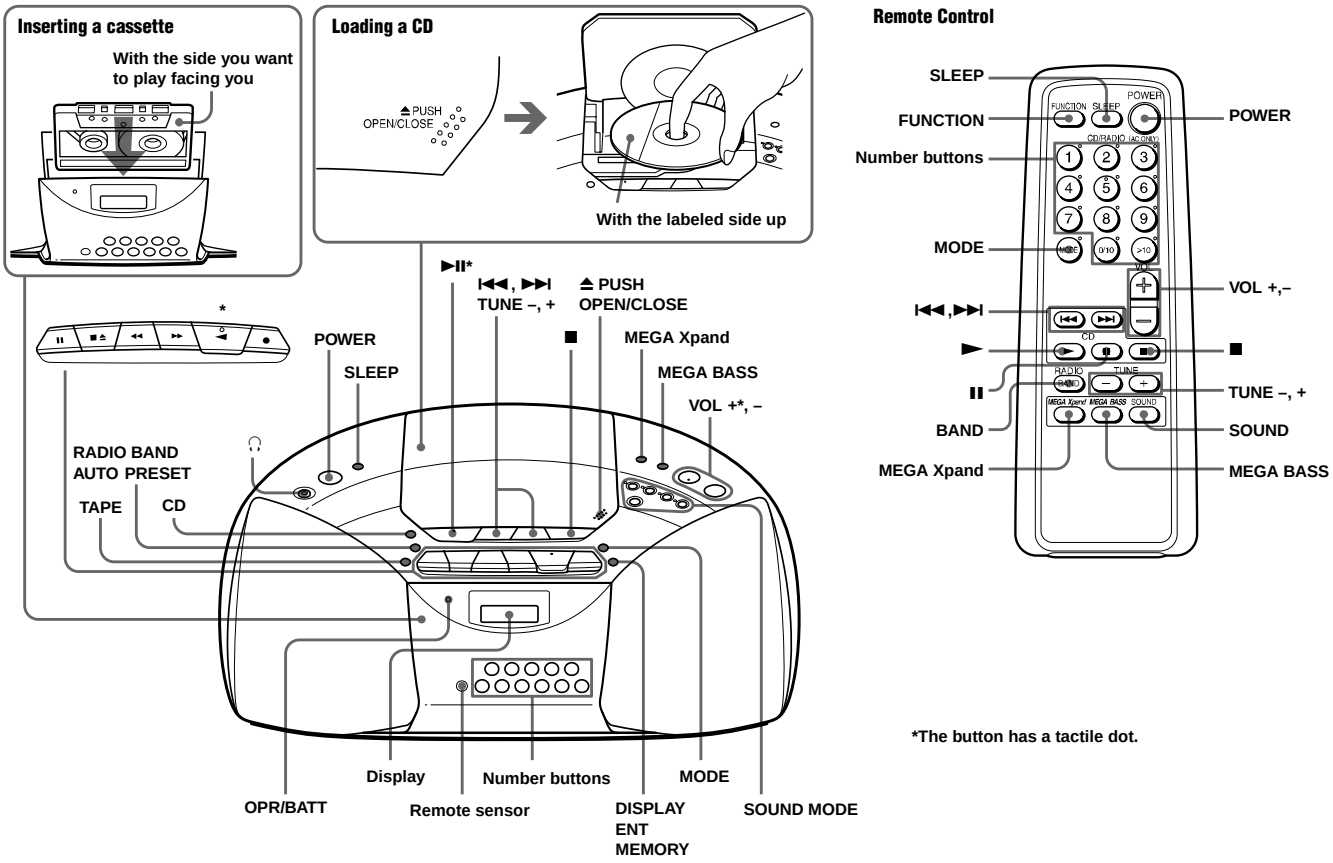
1. Turn ON the POWER button and press CD button to CD position.
2. Open the CD lid.
3. Turn on S801 with screwdriver, etc. as following figure.
4. Press the ►II (CD) button.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down three times for focus search.



SECTION 2
GENERAL

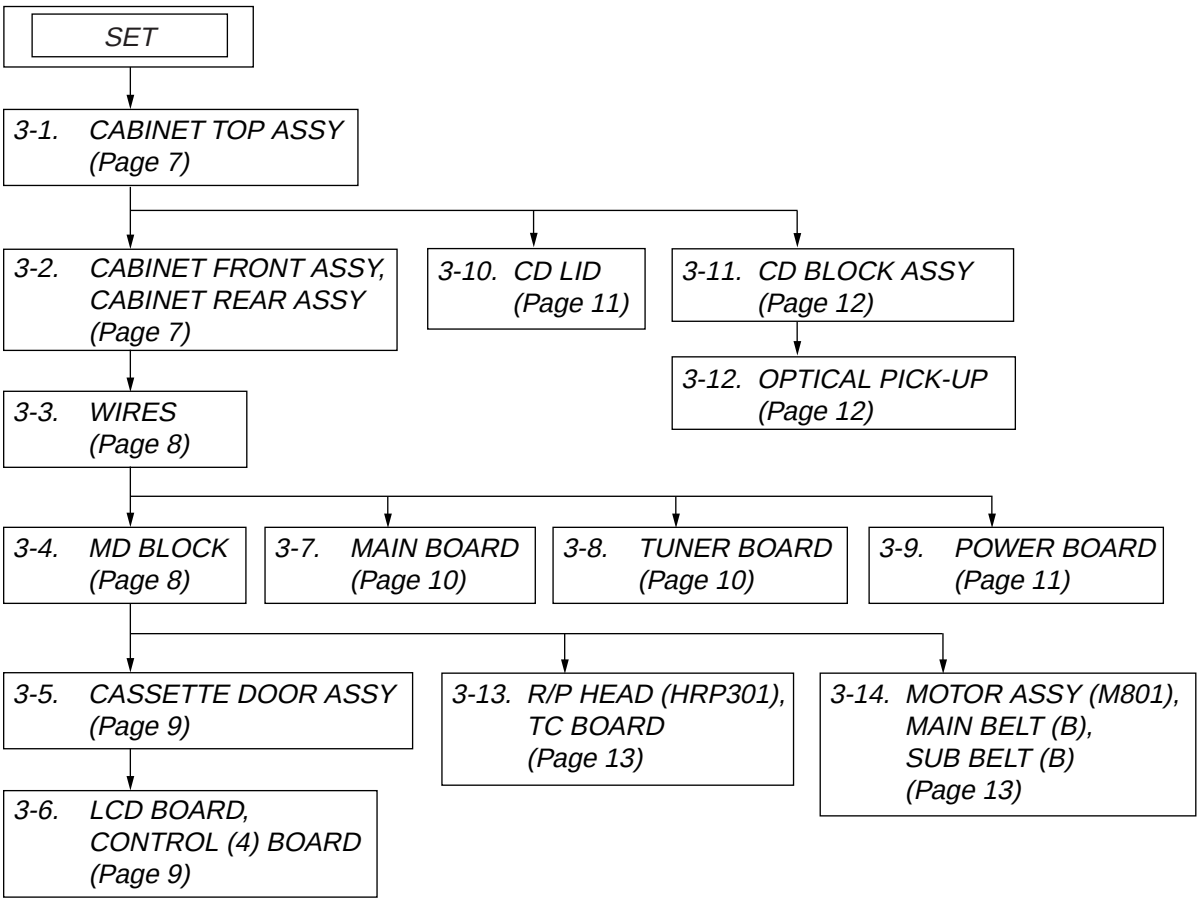
This section is extracted from instruction manual.

Location of controls



SECTION 3
DISASSEMBLY

• The equipment can be removed using the following procedure.


SET
3-1. CABINET TOP ASSY (Page 7)
3-2. CABINET FRONT ASSY, CABINET REAR ASSY (Page 7)
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3-8. TUNER BOARD (Page 10)
3-9. POWER BOARD (Page 11)
3-5. CASSETTE DOOR ASSY (Page 9)
3-13. R/P HEAD (HRP301), TC BOARD (Page 13)
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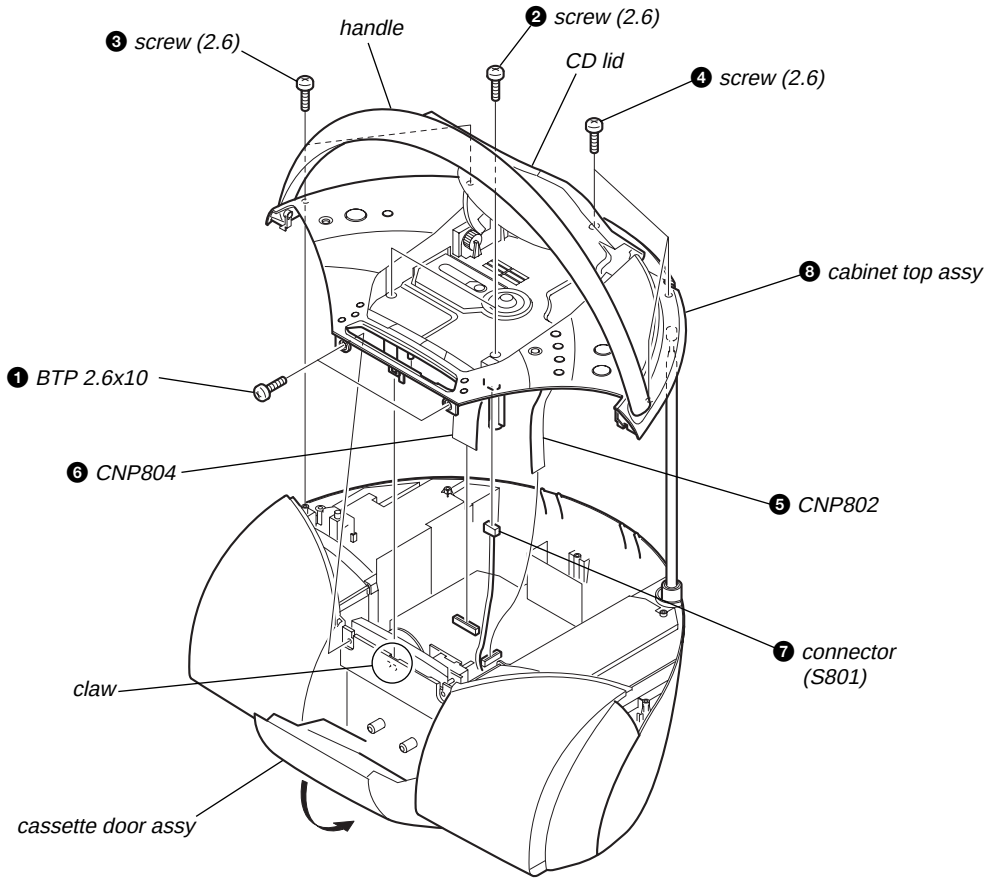
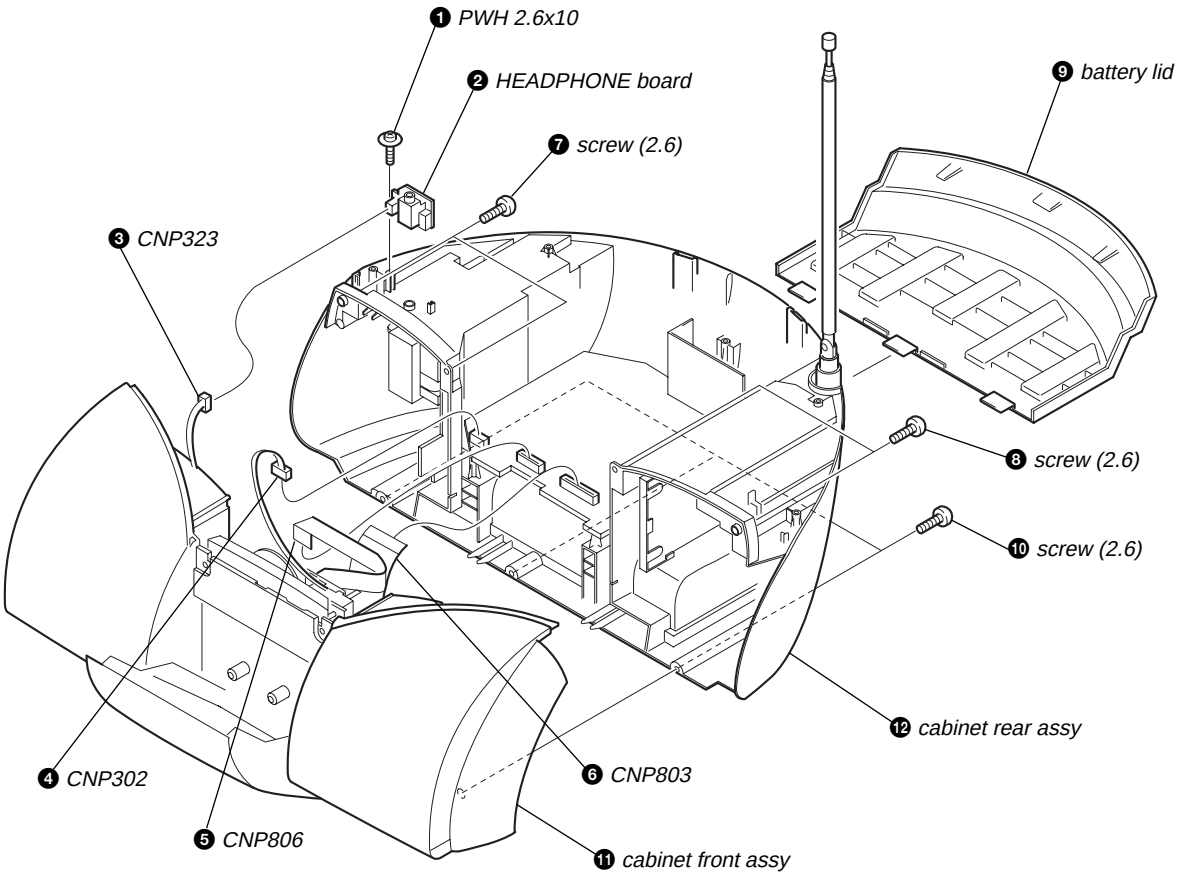
3-6. LCD BOARD, CONTROL (4) BOARD (Page 9)

Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET TOP ASSY

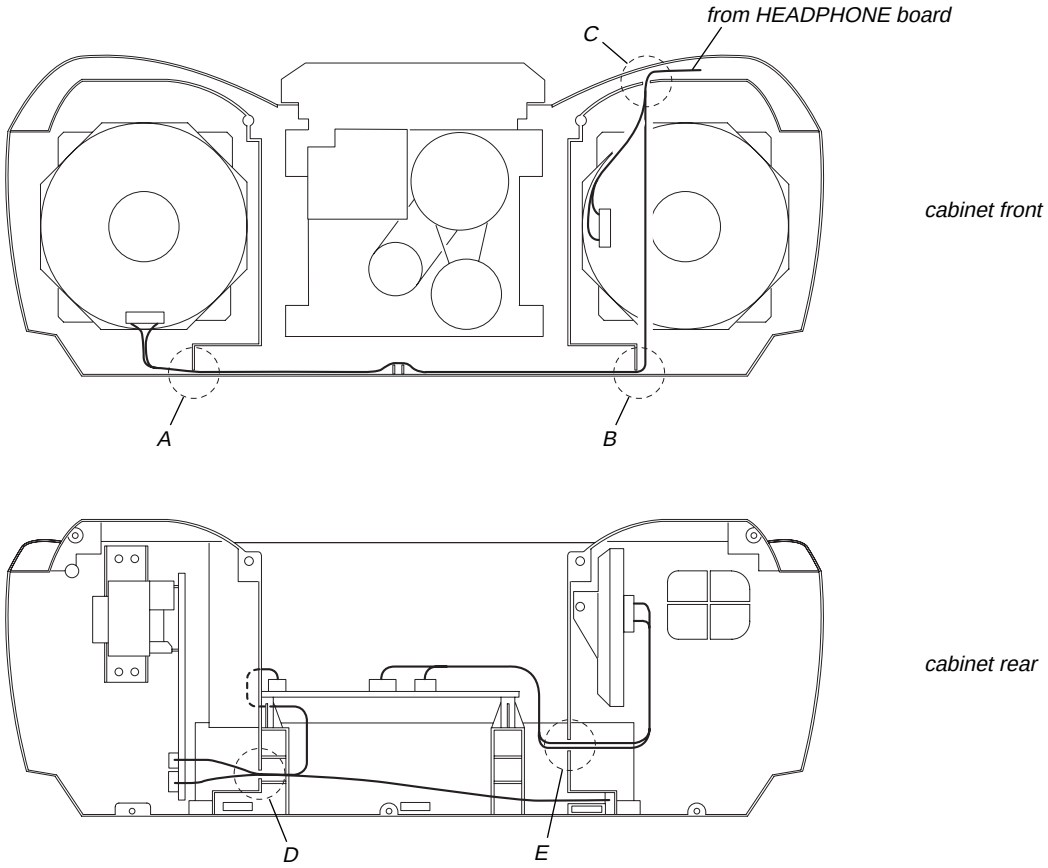


3-2. CABINET FRONT ASSY, CABINET REAR ASSY

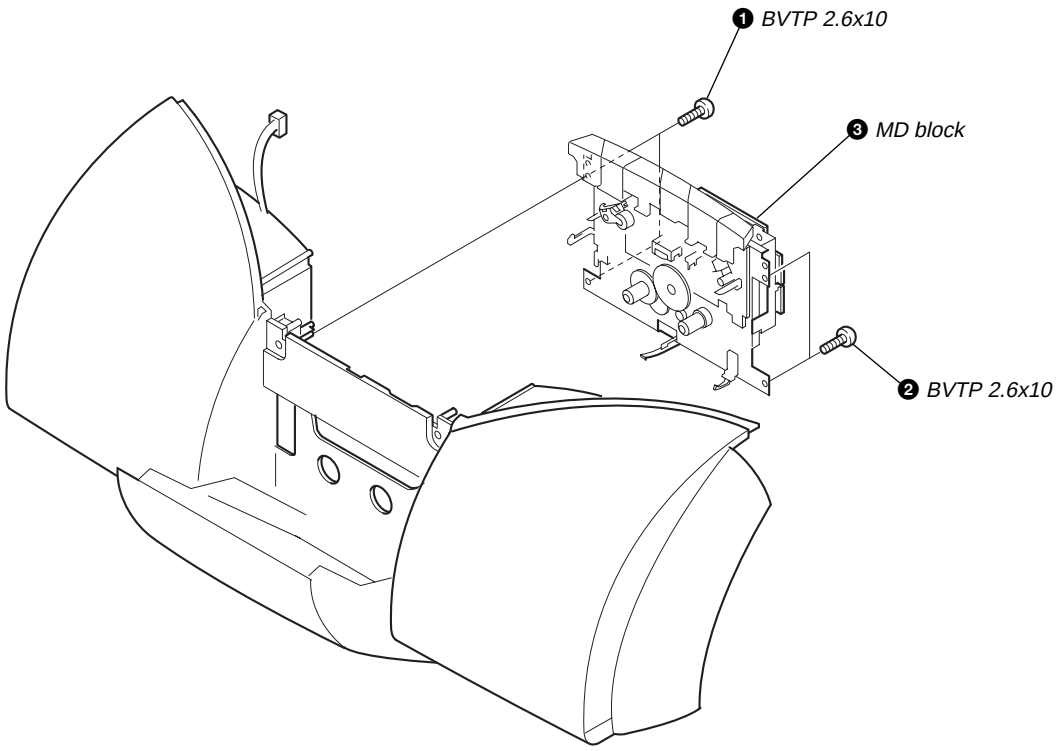


3-3. WIRES

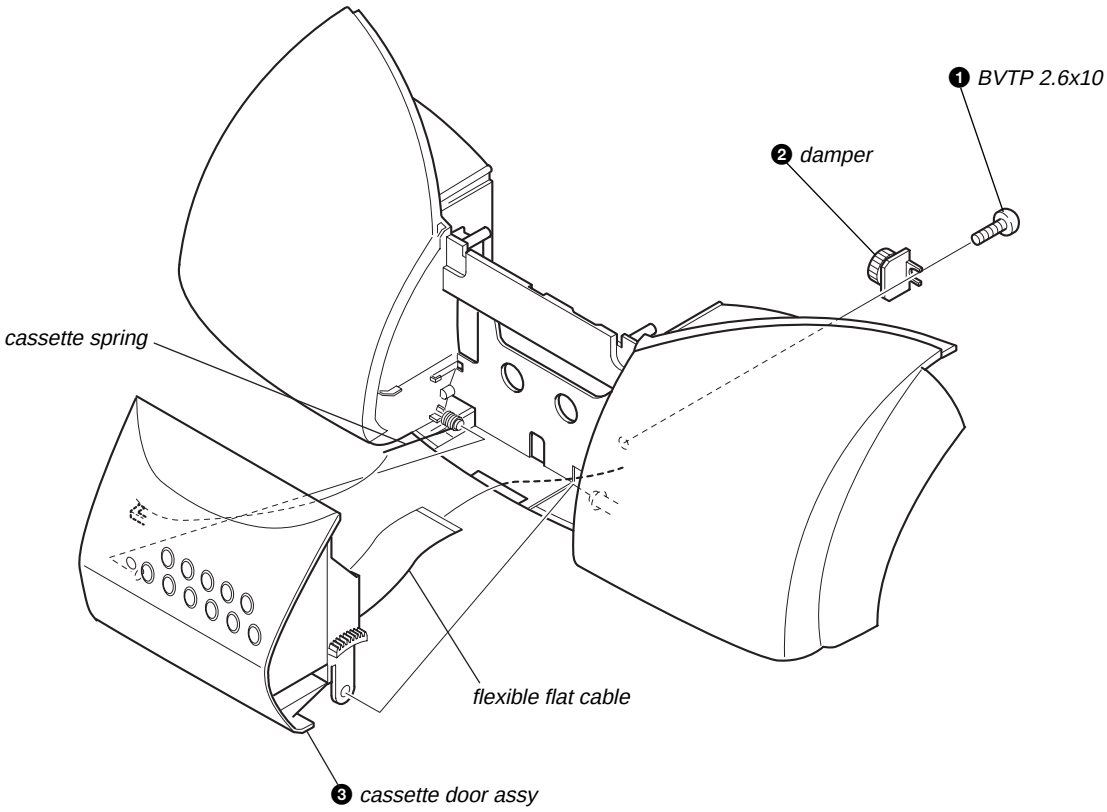
Put flat cable and wires between the cabinets and push them in the grooves located at A to E in the figure to prevent disconnection before assembling the set.



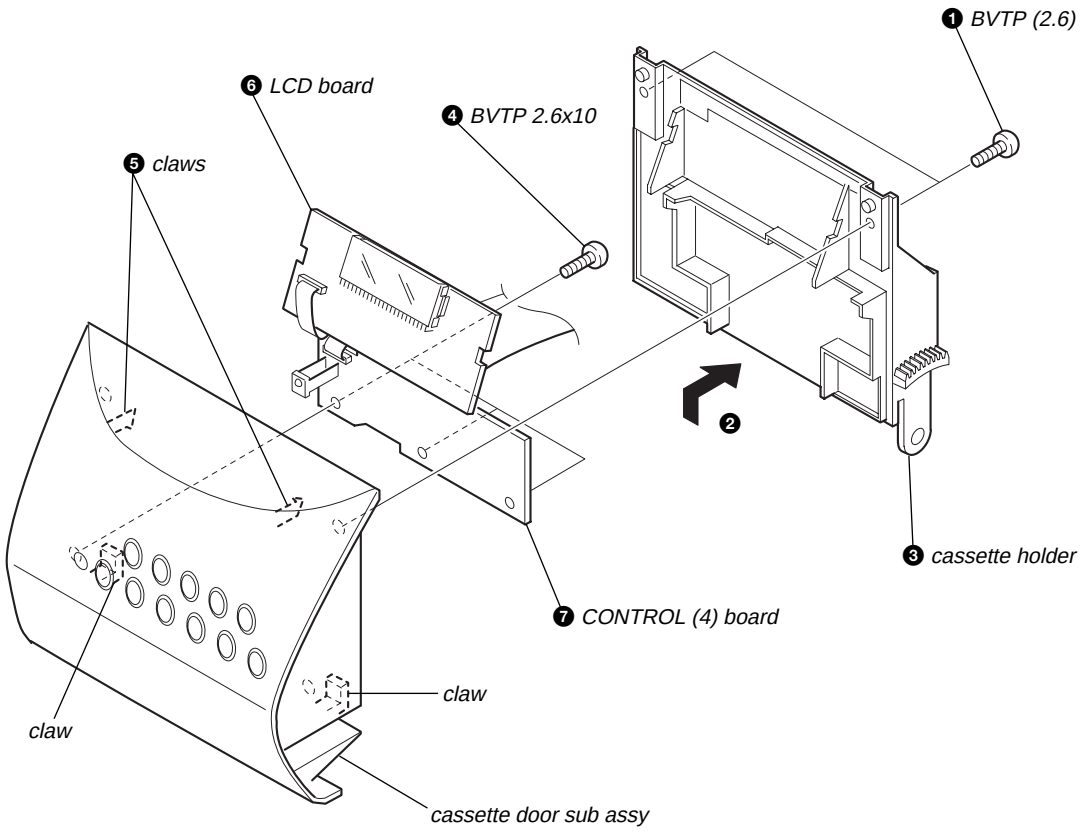
3-4. MD BLOCK



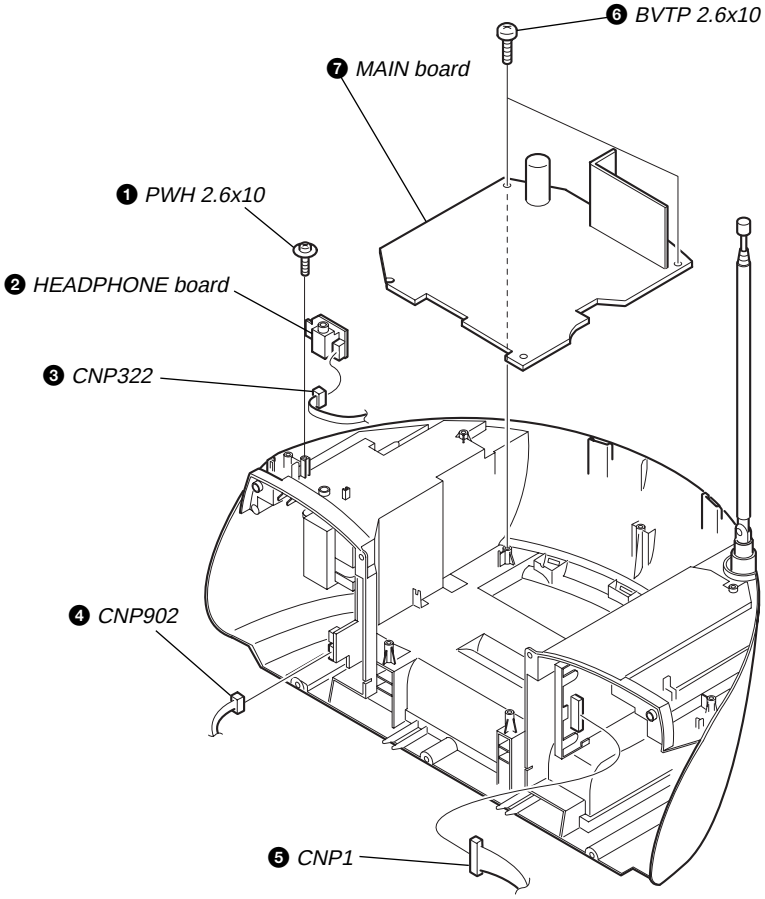
3-5. CASSETTE DOOR ASSY



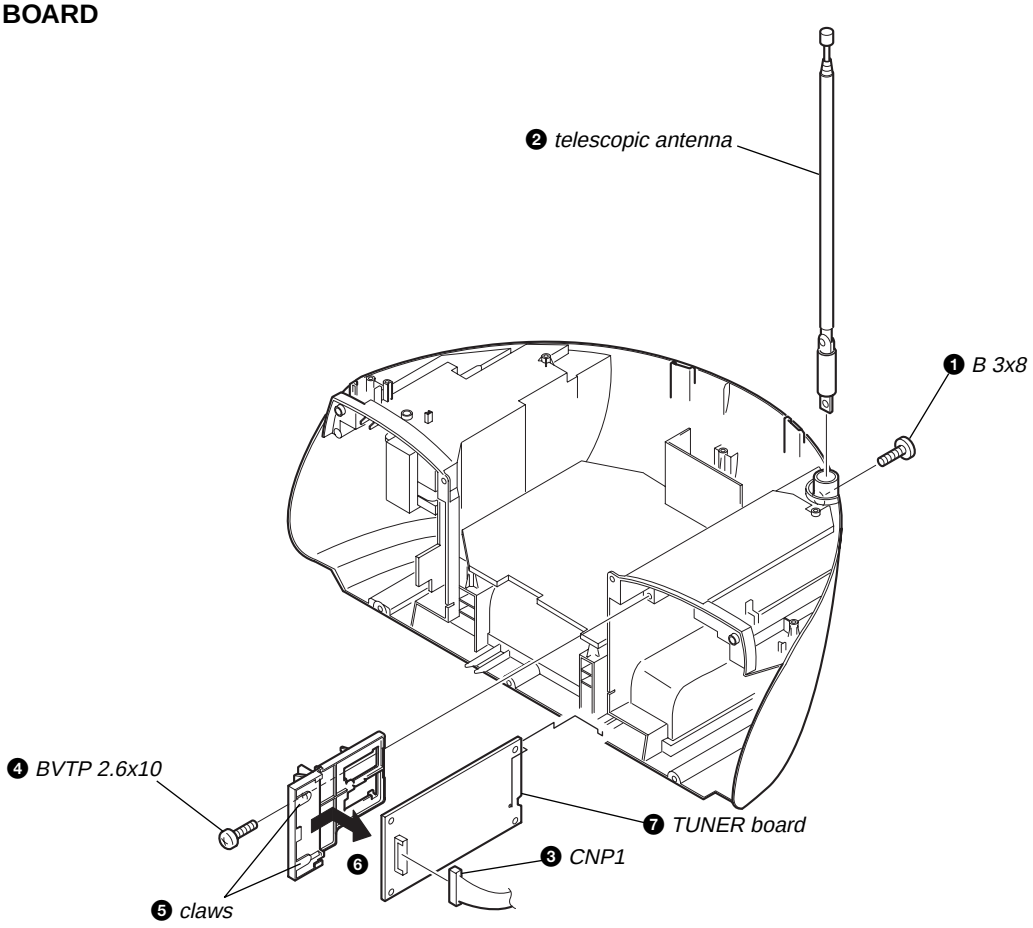
3-6. LCD BOARD, CONTROL (4) BOARD



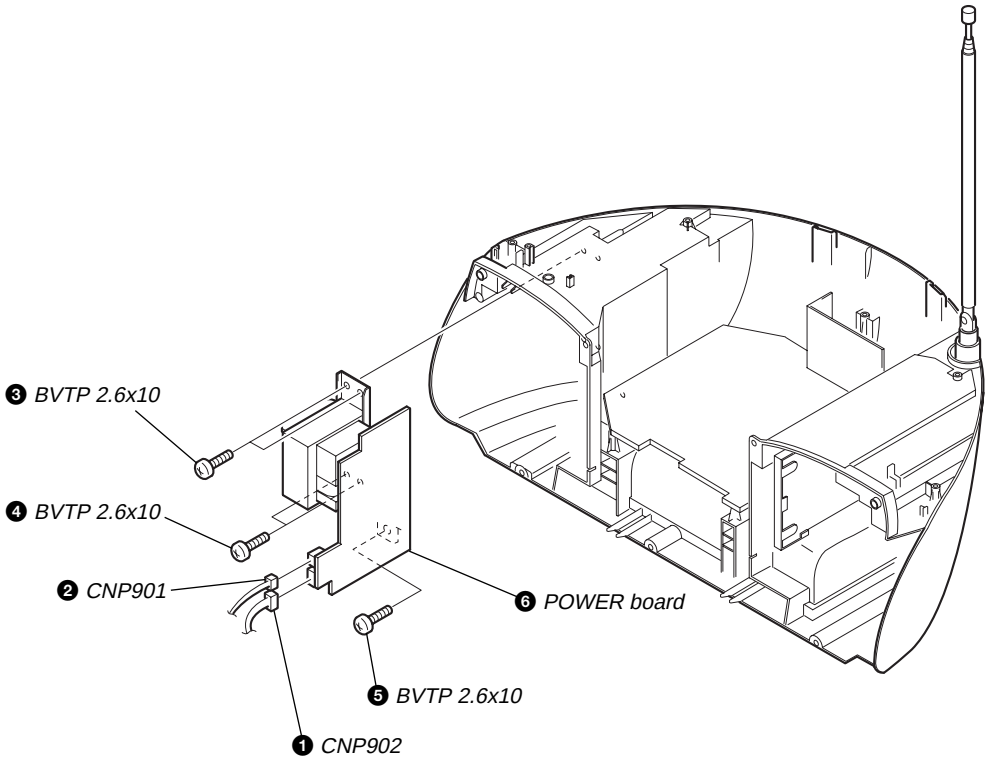
3-7. MAIN BOARD



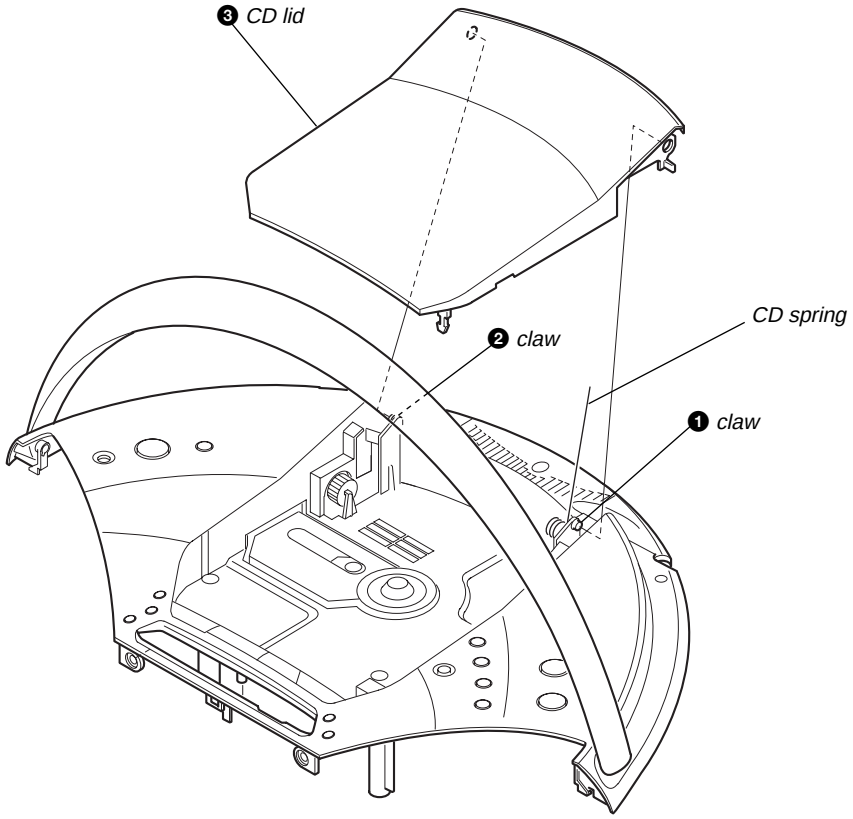
3-8. TUNER BOARD



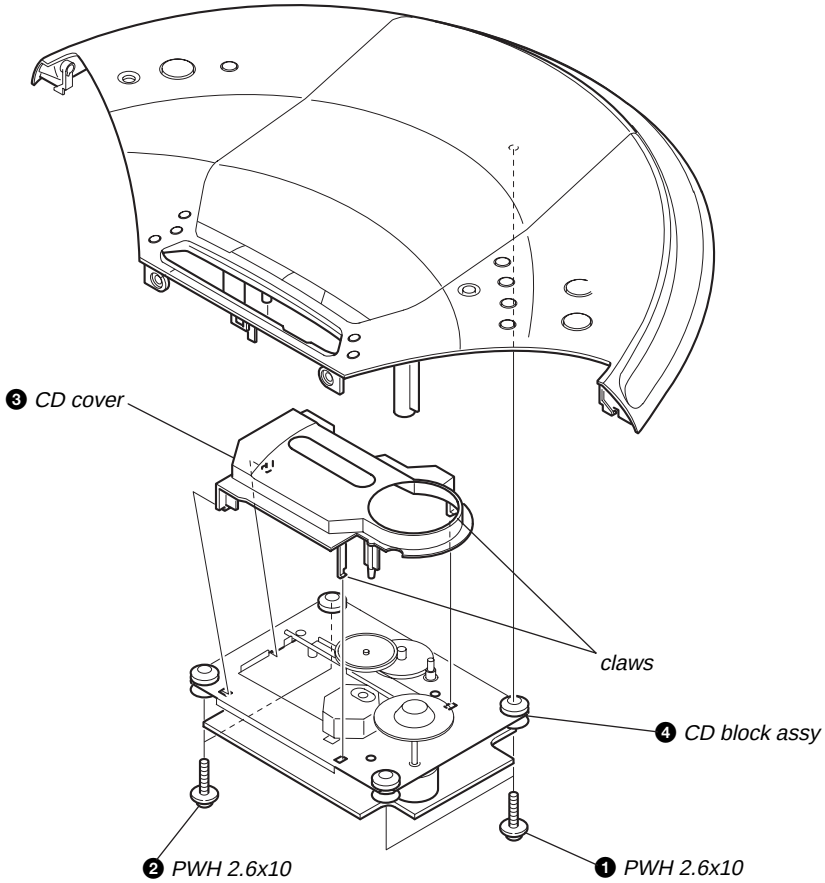
3-9. POWER BOARD



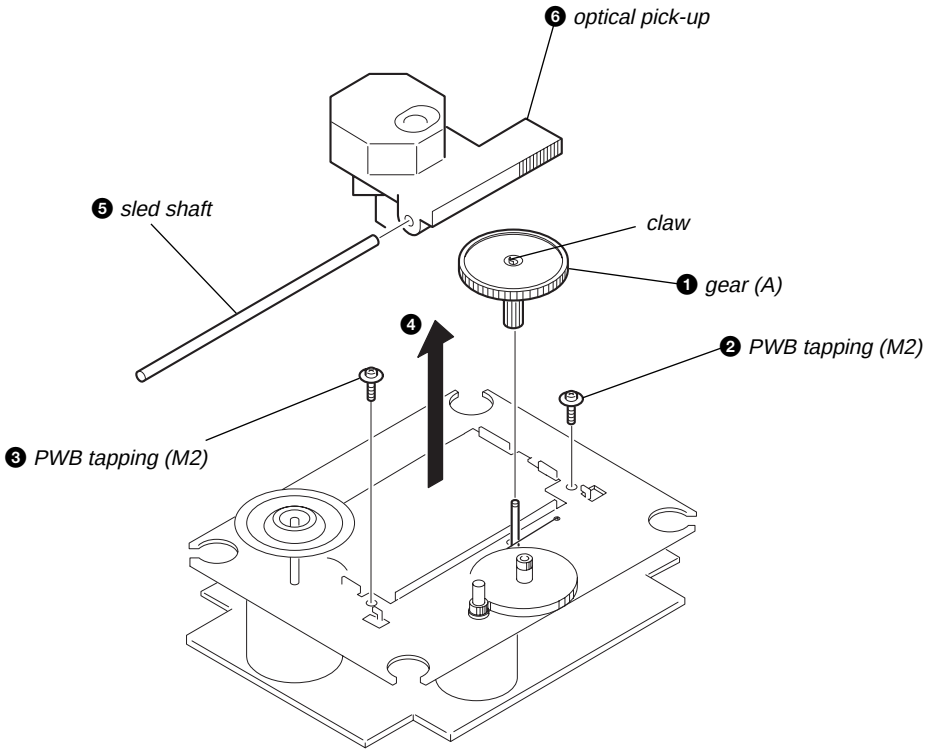
3-10. CD LID



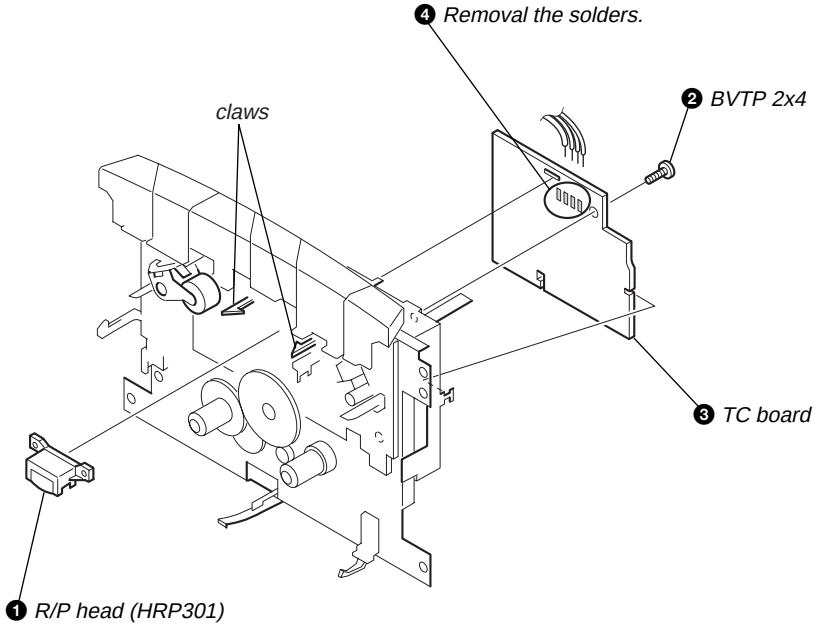
3-11. CD BLOCK ASSY



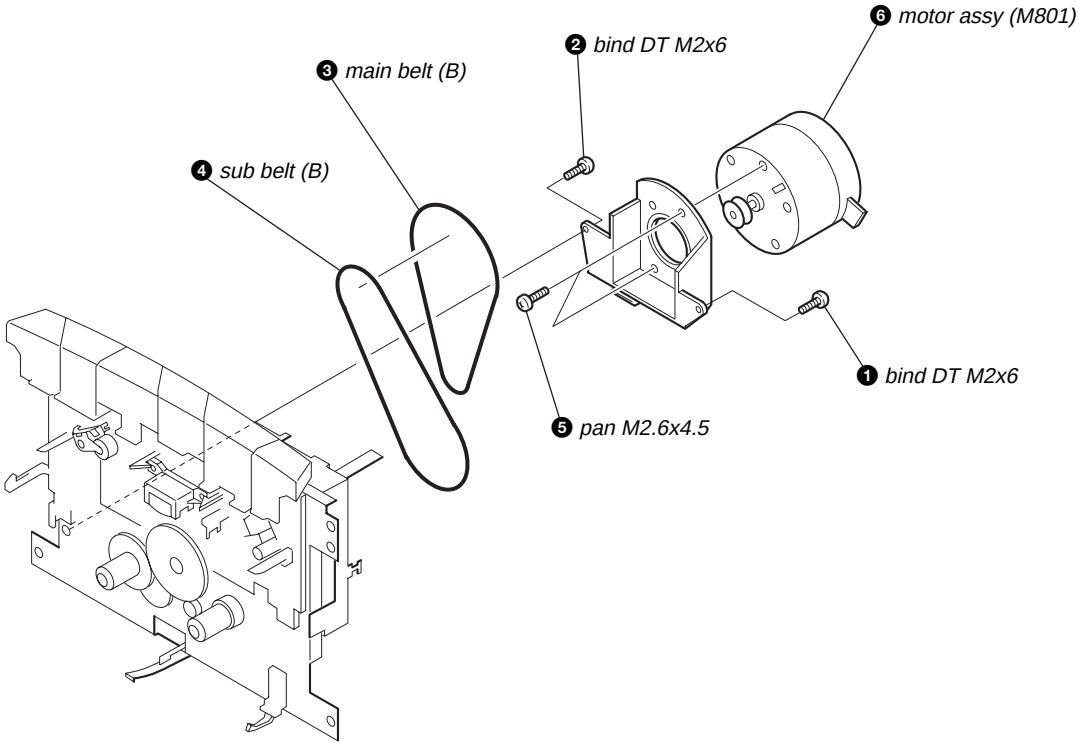
3-12. OPTICAL PICK-UP



3-13. R/P HEAD (HRP301), TC BOARD



3-14. MOTOR ASSY (M801), MAIN BELT (B), SUB BELT (B)



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head, erase head, capstan, pinch roller, rubber belts, idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head magnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage (9V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	2.95 – 6.86 mN • m (30 – 70 g • cm) (0.42 – 0.97 oz • inch)
FWD Back Tension	CQ-102C	0.15 – 0.53 mN • m (1.5 – 5.5 g • cm) (0.021 – 0.076 oz • inch)
FF	CQ-201B	more than 5.88 mN • m (more than 60 g • cm) (more than 0.83 oz • inch)
REW	CQ-201B	more than 5.88 mN • m (more than 60 g • cm) (more than 0.83 oz • inch)

Tape Tension Measurement

Mode	Tension meter	Meter Reading
FWD	CQ-403A	more than 100 g (more than 3.53 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

TAPE SECTION **0 dB = 0.775 V**

• Standard Output Level

Output terminal	HP OUT
load impedance	32 Ω
output signal level	0.25 V (–10 dB)

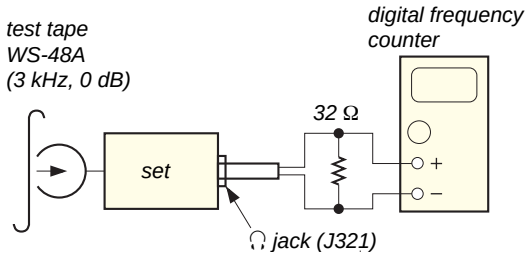
• Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode: playback



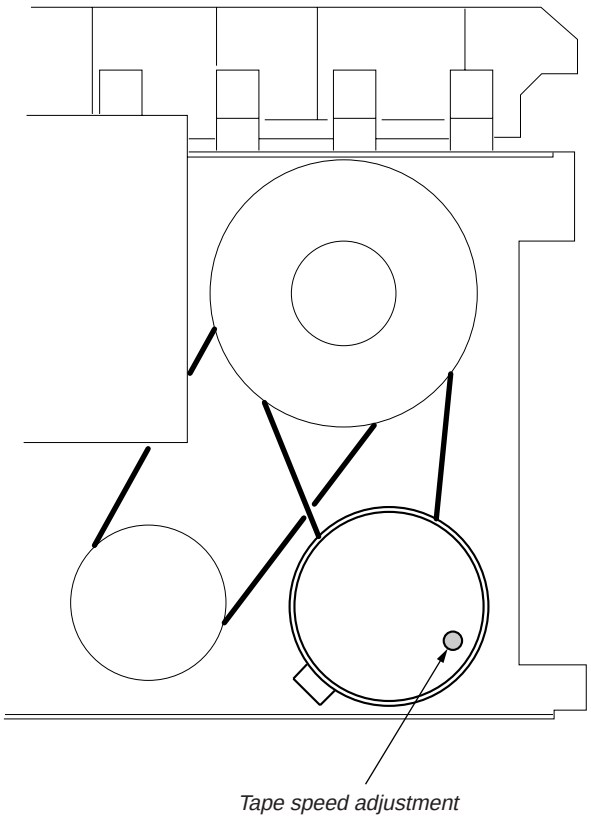
Adjust so that the value on the digital frequency counter is 3,000 Hz.

Specification Value:

Digital frequency counter
2,940 to 3,060 Hz

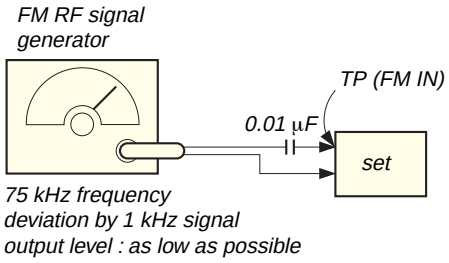
Adjust so that the frequency at the beginning and that at the end of tape winding are between 2,970 to 3,030 Hz.

Adjustment Location:

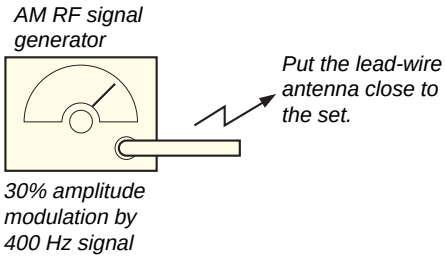


TUNER SECTION | 0 dB = 1 µV

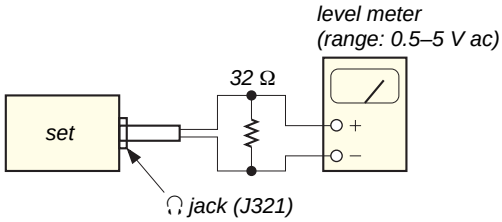
- **FM Section**
  Setting:
  RADIO BAND•AUTO PRESET button: FM



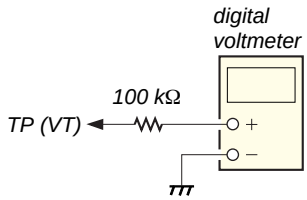
- **AM Section**
  Setting:
  RADIO BAND•AUTO PRESET button: AM



- **Connecting Level Meter (FM and AM)**



- **Connecting Digital Voltmeter (FM and AM)**



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM IF ADJUSTMENT
Adjust for a maximum reading on level meter.
T2
10.7 MHz

FM FREQUENCY COVERAGE ADJUSTMENT		
Frequency Display	87.5 MHz	108 MHz
Reading on Digital voltmeter	1.3 ± 0.3 V	3.0 ± 0.2 V
Adjustment Part	<confirmation>	L2

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	CT1
87.5 MHz	108 MHz

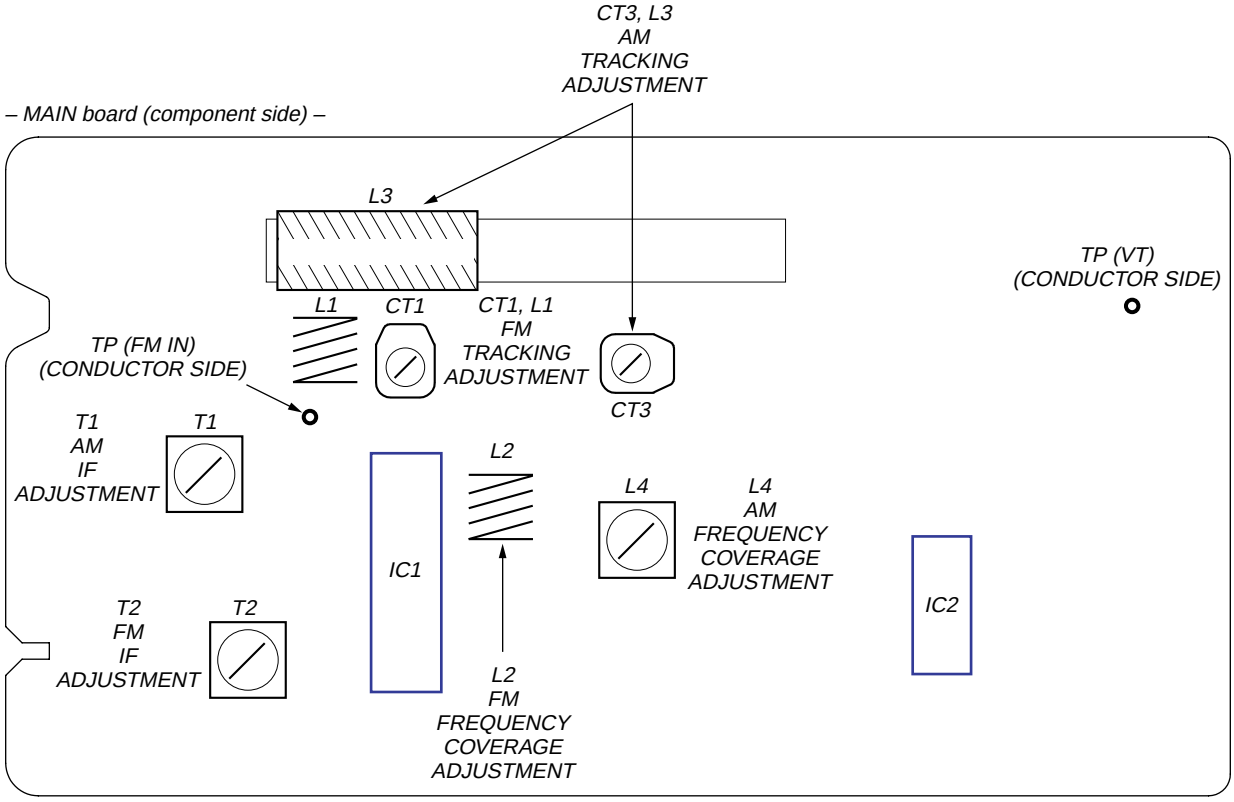
AM IF ADJUSTMENT
Adjust for a maximum reading on level meter.
T1
450 kHz

AM FREQUENCY COVERAGE ADJUSTMENT		
Frequency Display	530 kHz	1,710 kHz
Reading on Digital voltmeter	1.0 ± 0.05 V	5.3 ± 0.7 V
Adjustment Part	L4	<confirmation>

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	CT3
620 kHz	1,400 kHz

Adjustment Location: See page 16.

Adjustment Location:



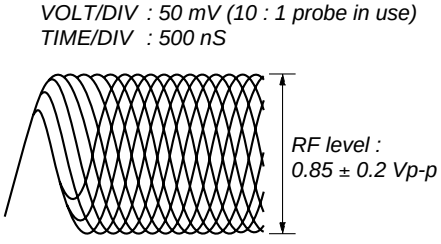
CD SECTION

CD section adjustments are done automatically in this set.
In case of operation check, confirm that focus bias.

FOCUS BIAS CHECK

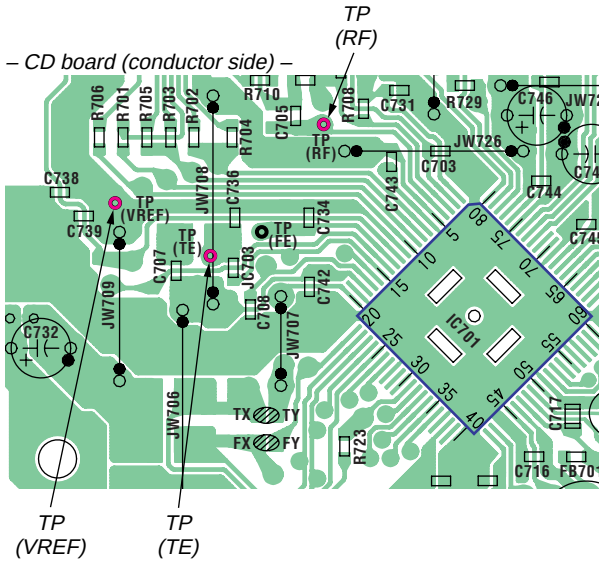
1. Connect the oscilloscope between IC701 pin ④ and pin ⑪ (or TP (RF) and TP (VREF)).
2. Insert the disc (YEDS-18). (Part No. : 3-702-101-01)
3. Press the ► ❚❚ (CD) button.
4. Confirm that the oscilloscope waveform is as shown in the figure below. (eye pattern)
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

• RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Test Point:



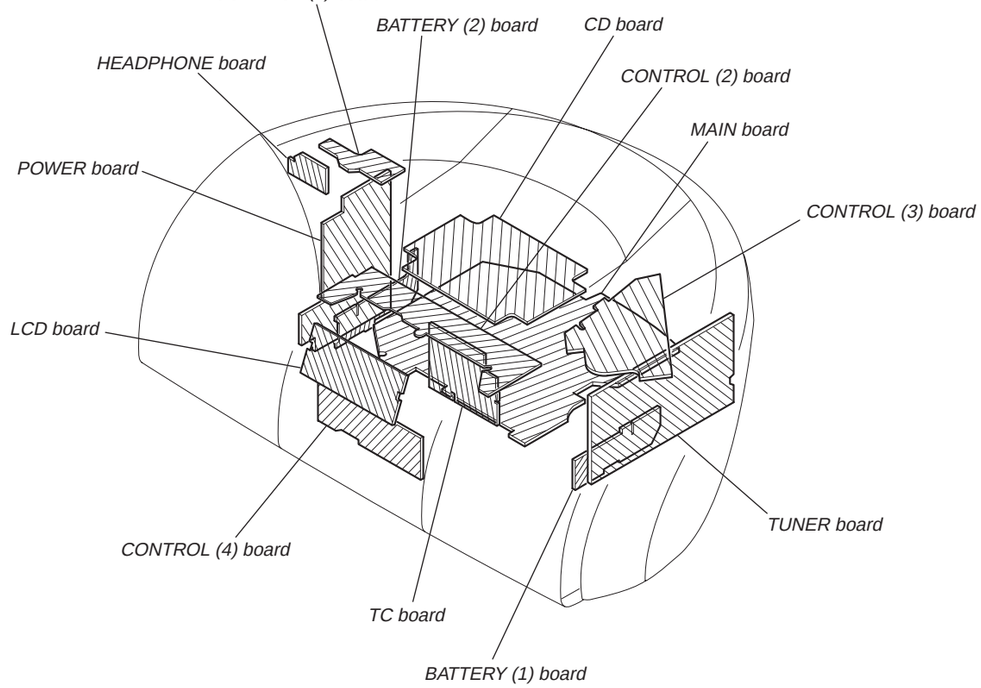
SECTION 6
DIAGRAMS

6-1. IC PIN DESCRIPTION

• IC802 uPD789477GC-A14-8BT (SYSTEM CONTROLLER)

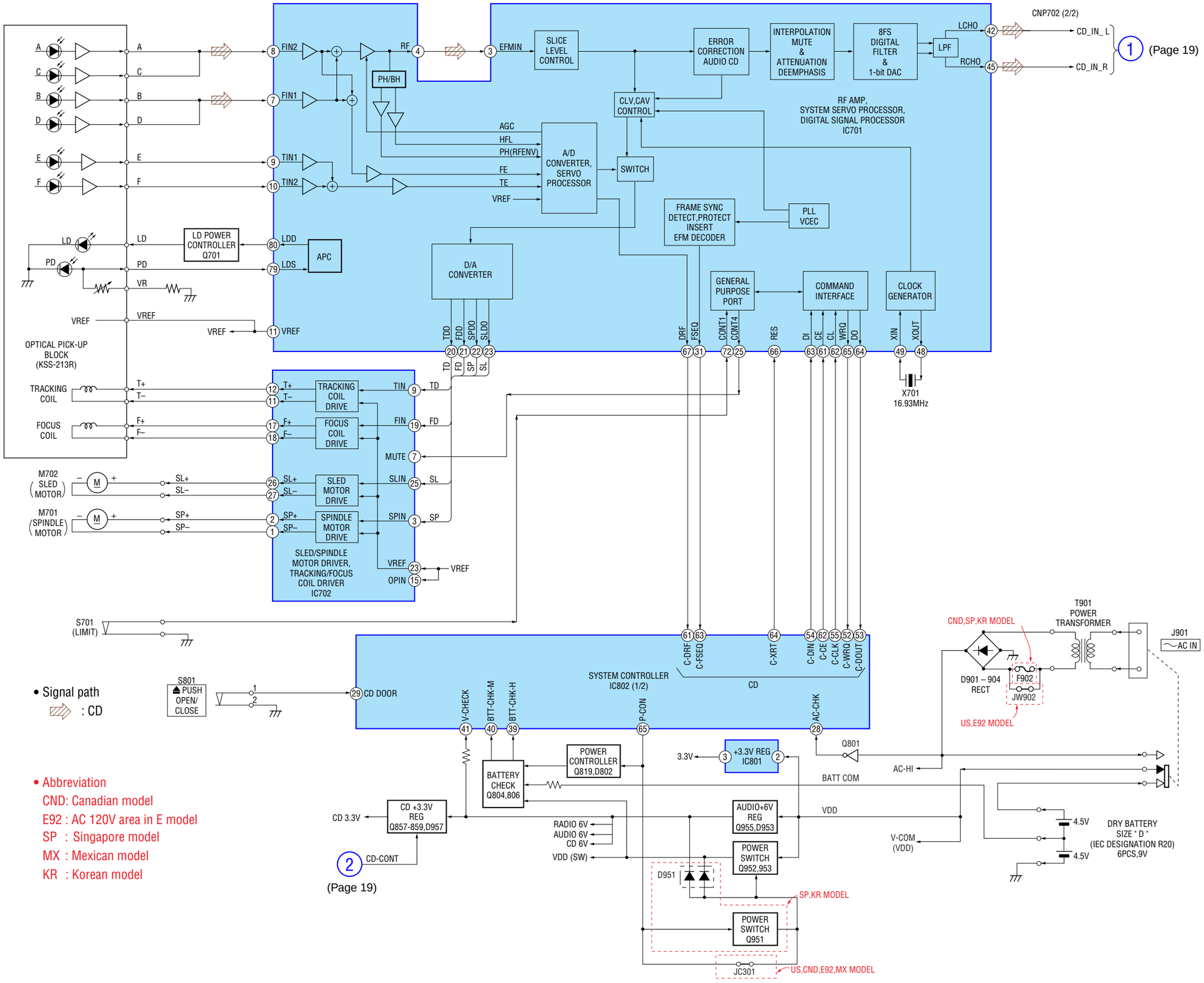
Pin No.	Pin Name	I/O	Pin Description
1, 2	NC	—	Not used. (Open)
3 to 5	VLC2 to 0	I	LCD drive bias voltage output
6 to 9	COM0 to 3	O	LCD drive common output
10 to 26	S0 to 16	O	LCD drive segment output
27	REC	I	Tape record signal input H: REC
28	AC-CHK	I	AC power supply detection signal input L: AC in
29	CD-DOOR	I	CD door open/close switch input L: Close
30	S-ROCK	O	ROCK LED control signal output
31	S-POP	O	POP LED control signal output
32	S-JAZZ	O	JAZZ LED control signal output
33	S-VOCAL	O	VOCAL LED control signal output
34	S-SUR	O	SURROUND LED control signal output Not used. (Open)
35	A-MUTE	O	Audio mute output H: Mute
36	CD	O	CD function output H: CD
37	TAPE	O	Tape function output H: Tape
38	AVDD	—	Analog power supply pin for A/D converter (+3.3 V)
39	BTT-CHK-H	I	Battery check input for Hi-voltage
40	BTT-CHK-M	I	Battery check input for Mid-voltage
41	V-CHECK	I	Voltage transaction check input
42 to 45	KEY4 to 1	I	Key input
46	MODE CHK	I	Destination setting input
47	AGND	—	Analog ground for A/D converter
48	REMOTE	I	Sircs receiver data input
49	TC-PLAY	I	Tape play switch input L: Play
50	WP/INI	O	Wake-up/Initial setting read signal output
51	MT-CONT	O	Motor control signal output Not used. (Open)
52	C-WRQ	I	CD write request data input
53	C-DOUT	I	CD digital signal processor data input
54	C-DIN	O	CD digital signal processor data output
55	C-CLK	I	CD serial data transfer clock signal input
56	R-COUNT	I	Tuner PLL IF count input
57	R-DATA	O	Tuner PLL data output
58	R-CLK	O	Tuner PLL clock output
59	R-LAT	O	Tuner PLL latch output
60	B-MUTE	O	Tuner mute signal output H: Mute
61	C-DRF	I	CD DRF signal input
62	C-CE	O	CD chip enable output
63	C-FSEQ	I	CD frame SYNC input
64	C-XRT	O	CD system reset output
65	P-CON	O	System power control output H: PCON
66	ISS1	O	ISS1 output
67	ISS2	O	ISS2 output
68	DBB	O	MEGA BASS control output H: MEGA BASS off, L: MEGA BASS on
69	ICO	I	Connected to VSS.
70	XT1	I	Sub system oscillation input (32.768 kHz)
71	XT2	O	Sub system oscillation output (32.768 kHz)
72	VDD	—	Main power supply pin for A/D converter (+3.3 V)
73	VSS	—	Main ground
74	X1	I	Main system oscillation input (4.19 MHz)
75	X2	O	Main system oscillation output (4.19 MHz)
76	RST	I	System reset input
77	V-CLK	O	Volume clock output
78	V-DATA	O	Volume data output
79	SCL	O	EEPROM clock output
80	SDA	I/O	EEPROM input/output

6-2. CIRCUIT BOARDS LOCATION

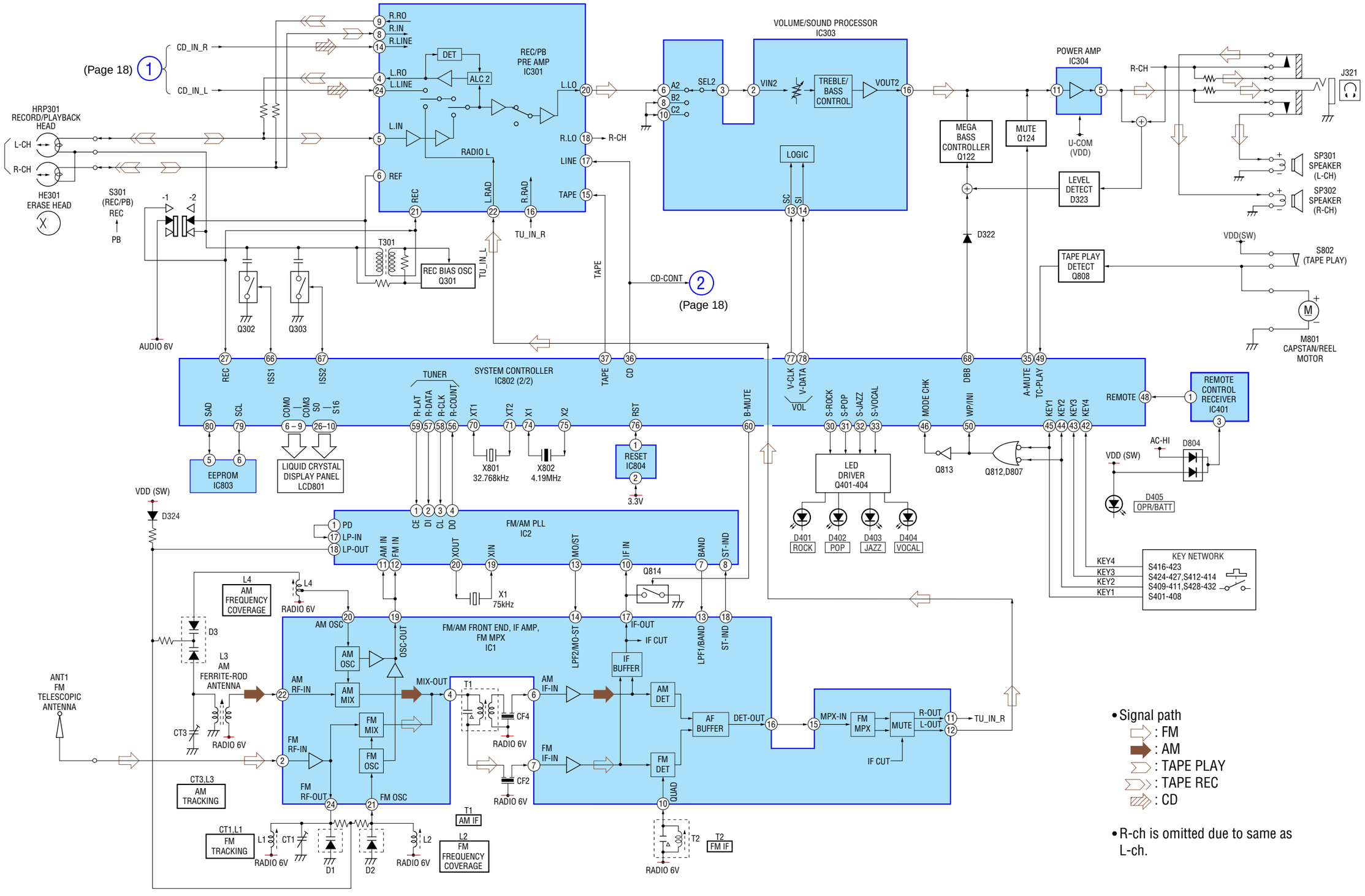


17

6-3. BLOCK DIAGRAM — CD SECTION —



6-4. BLOCK DIAGRAM — MAIN SECTION —



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Common Note on Schematic Diagrams:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

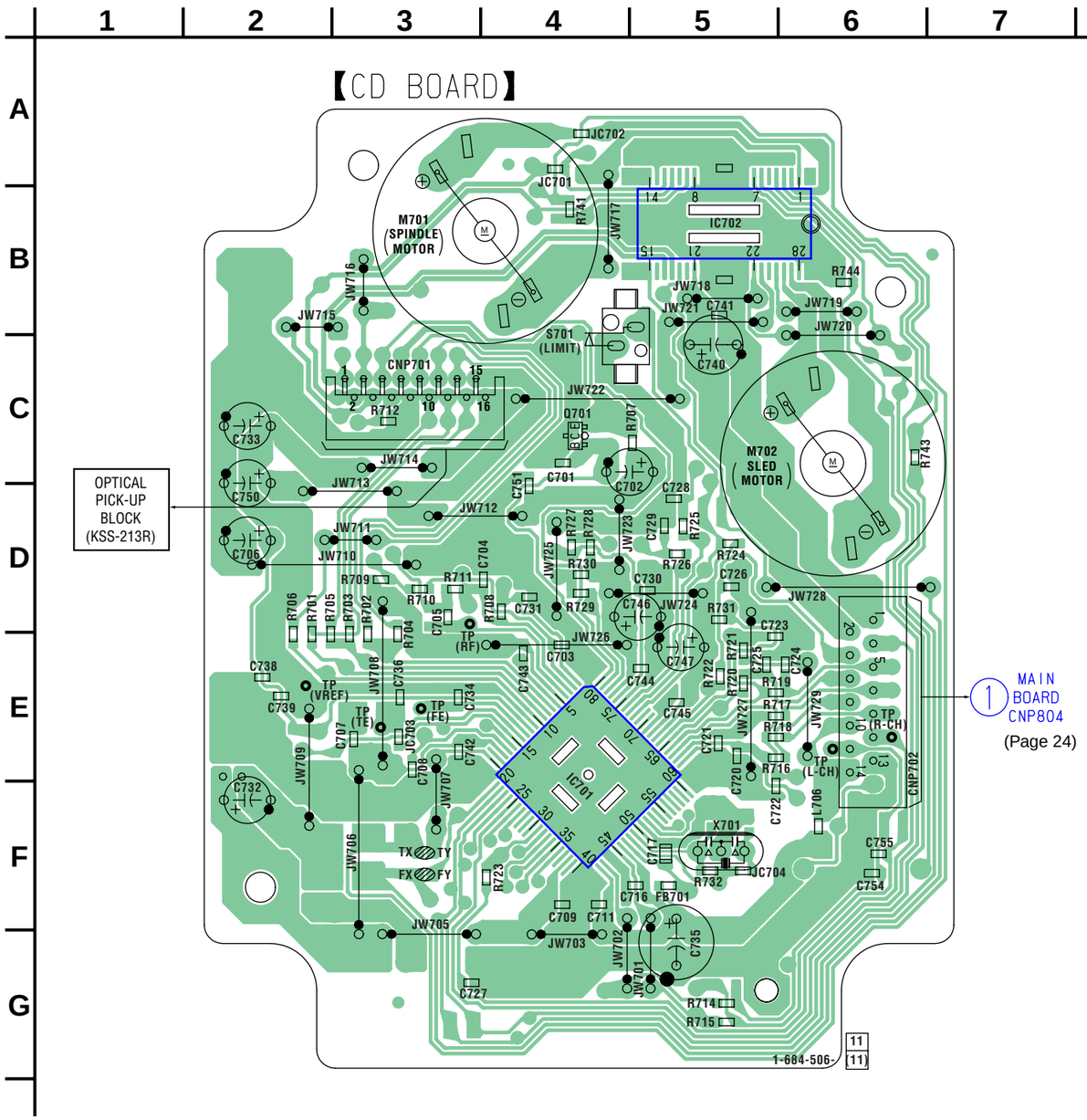
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- ▬ : B+ Line.
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM
  - ⇨ : PB
  - ⇨ : REC
  - ⇨ : CD
- Abbreviation
  - CND : Canadian model.
  - E92 : AC 120V area in E model.
  - MX : Mexican model.
  - SP : Singapore model.
  - KR : Korean model.

Common Note on Printed Wiring Boards:

- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.
- Abbreviation
  - CND : Canadian model.
  - E92 : AC 120V area in E model.
  - MX : Mexican model.
  - SP : Singapore model.
  - KR : Korean model.

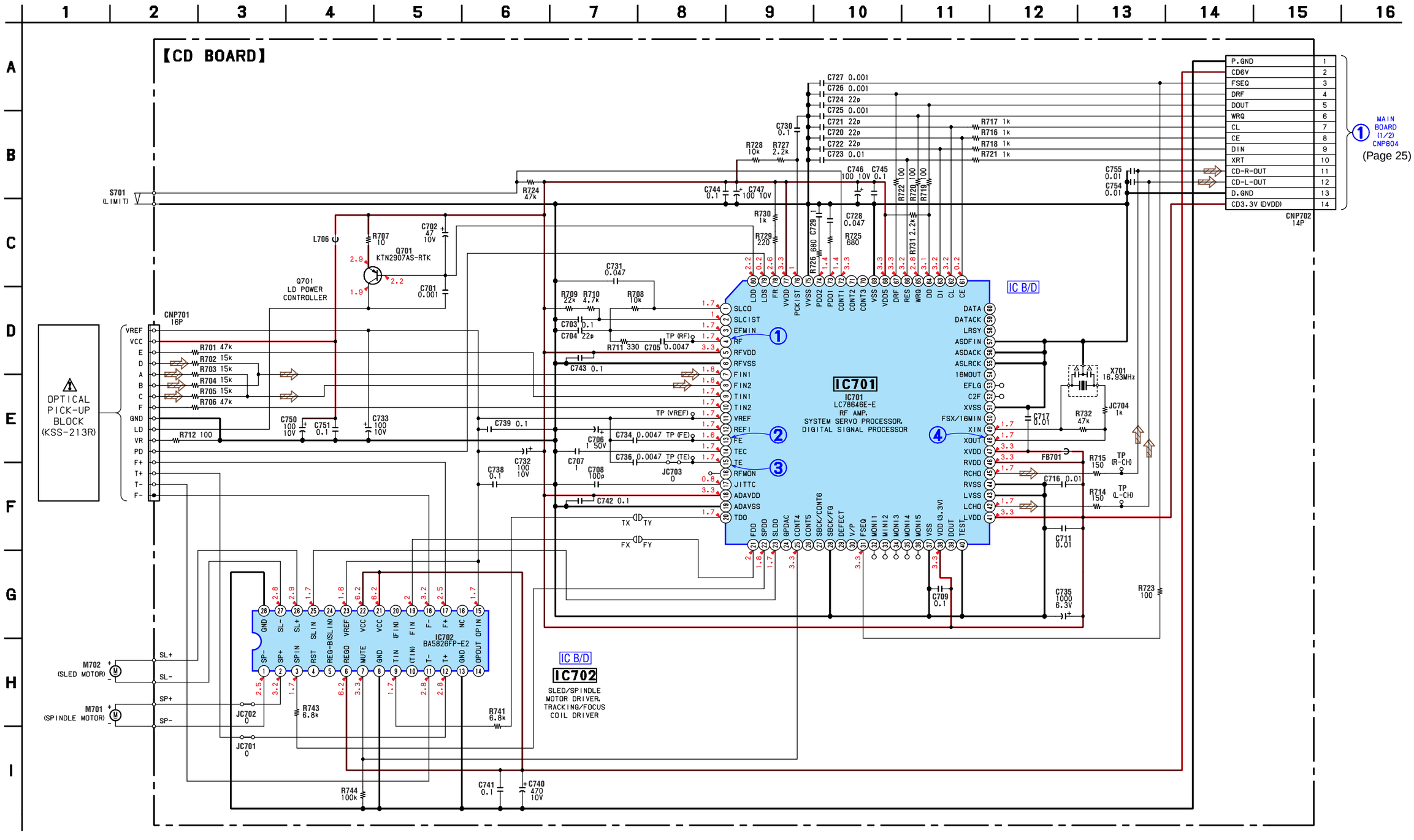
6-5. PRINTED WIRING BOARD — CD SECTION — • Refer to page 17 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
IC701	E-4
IC702	B-5
Q701	C-4

6-6. SCHEMATIC DIAGRAM — CD SECTION — • Refer to page 20 for Common Note on Schematic Diagrams and page 35 for IC Block Diagrams.

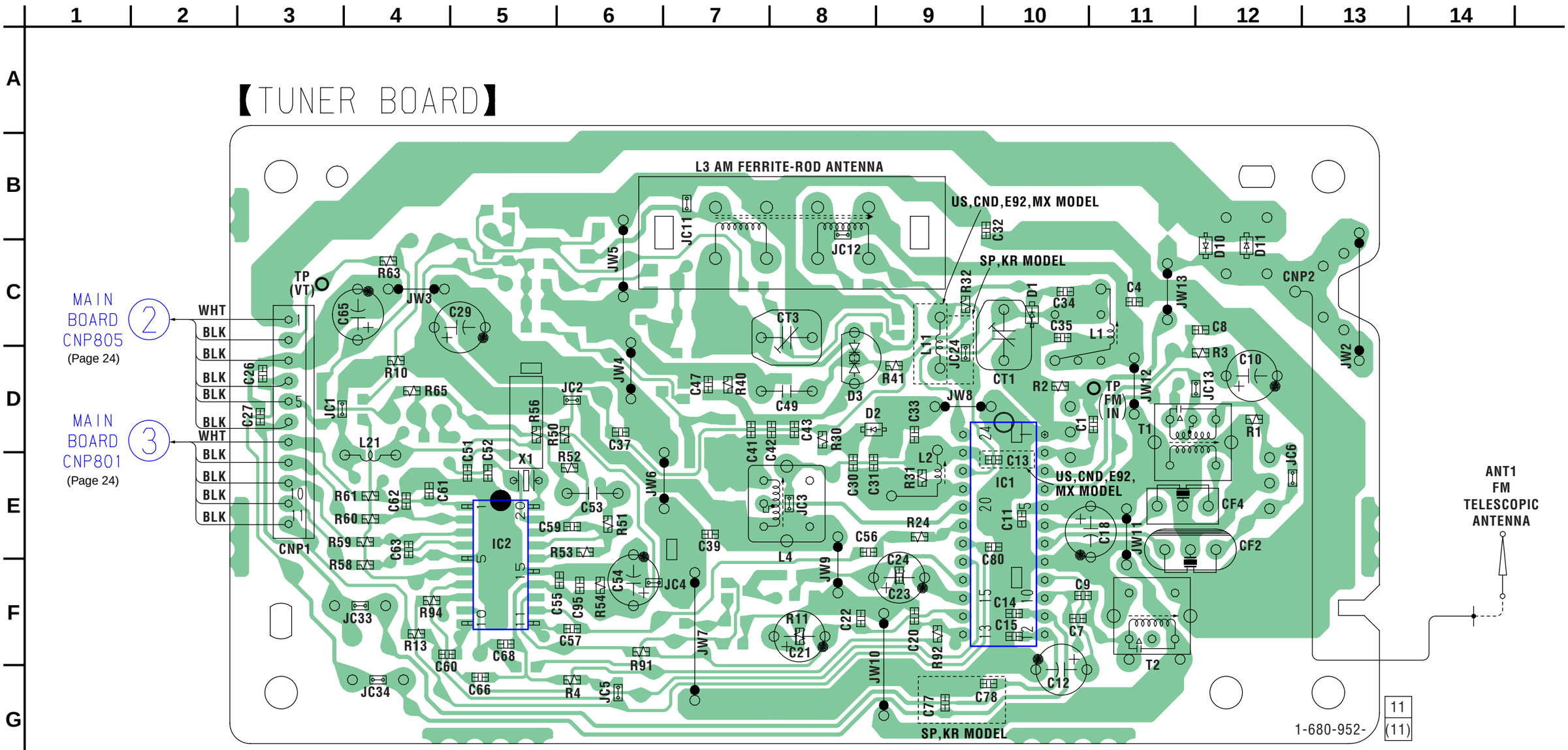


• Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : CD PLAY

• Waveforms (Mode: PLAY)

①	②	③	④
500mV/div 0.5µsec/div	100mV/div 20µsec/div	100mV/div 20µsec/div	1V/div 0.05µsec/div
0.85±0.2Vp-p	1.8V	1.8V	3.2Vp-p
	Approx. 100mVp-p	Approx. 100mVp-p	16.93MHz
IC701 ④ (RF)	IC701 ⑬ (FE)	IC701 ⑮ (TE)	IC701 ㊽ (XOUT)

6-7. PRINTED WIRING BOARD — TUNER SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.



- **Semiconductor Location**

Ref. No.	Location
D1	C-10
D2	D-8
D3	D-8
D10	B-12
D11	B-12
IC1	E-10
IC2	E-5

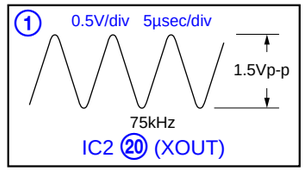
6-8. SCHEMATIC DIAGRAM — TUNER SECTION — • Refer to page 20 for Common Note on Schematic Diagrams and page 36 for IC Block Diagrams.

【TUNER BOARD】

L3 AM FERRITE-ROD ANTENNA
CT3, L3 AM TRACKING
D3 KV1520NT
L4 AM OSC
L4 AM FREQUENCY COVERAGE
JC24 0 — SP, KR MODEL
L11 1µH — US, CND, E92, MX MODEL
CT1, L1 FM TRACKING
L2 FM FREQUENCY COVERAGE
C13 0.01 — US, CND, E92, MX MODEL
IC B/D IC1 IC1 TA2149BN FM/AM FRONT END, IF AMP, FM MPX
IC B/D IC2 IC2 LC72137M-TLM FM/AM PLL
X1 75kHz
JC13 0
T1 AM IFT
T2 FM IFT
T2 FM IF
T1 AM IF
* C14, 15: 0.022 (US, CND, E92, MX) / 0.01 (SP, KR)
SP, KR MODEL
ANT1 FM TELESCOPIC ANTENNA
D10 1SS355
D11 1SS355
TP (FM IN)
TP (VT)
CNP1 11P
B-MUTE
R-COUNT
R-CLOCK
R-DATA
R-CE
TU-L-OUT
RADIO 6V
TU-R-OUT
A-GND
VT
S-GND
MAIN BOARD (1/2) CNP801 (Page 25)
MAIN BOARD (1/2) CNP805 (Page 25)

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM

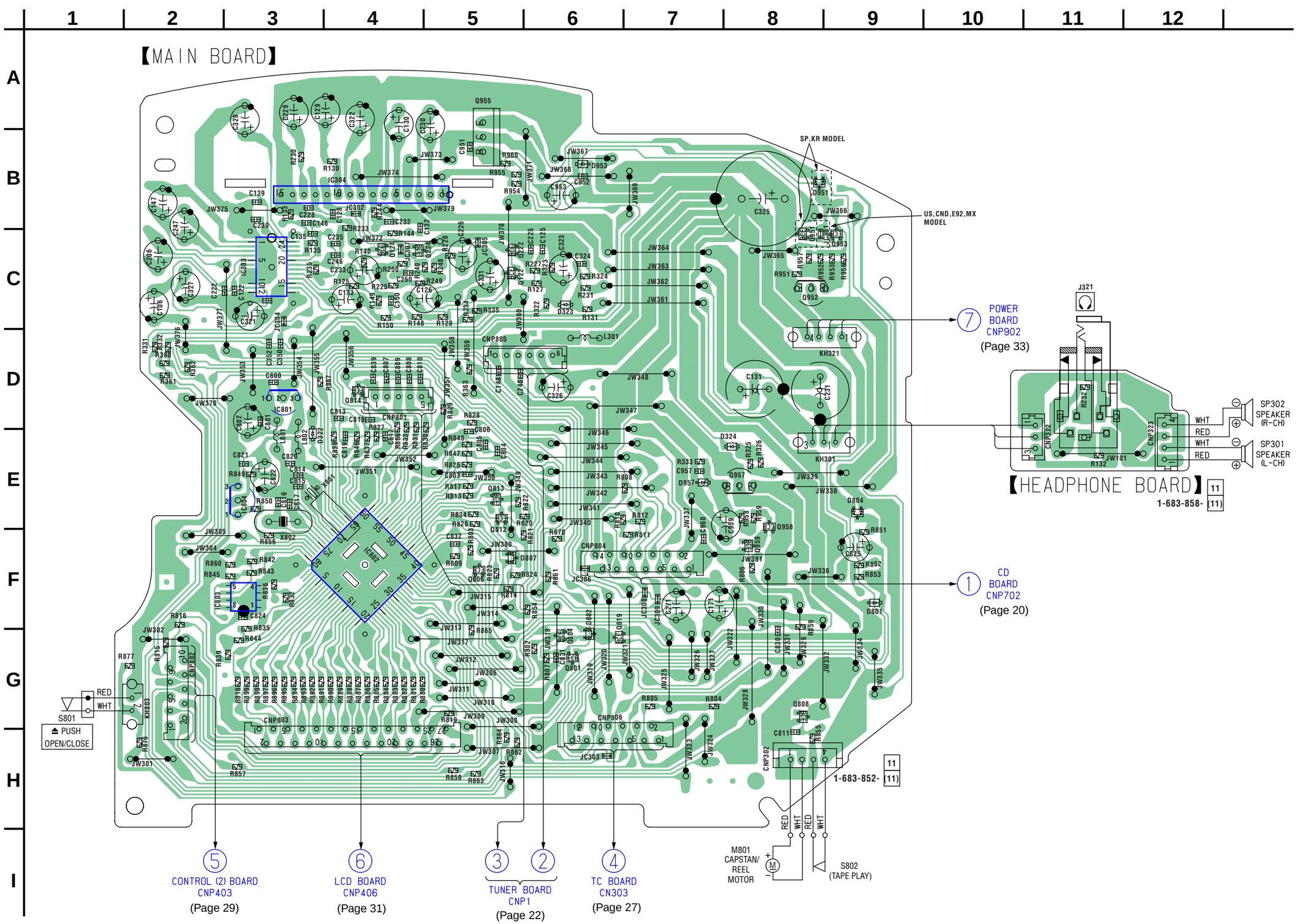
• Waveform



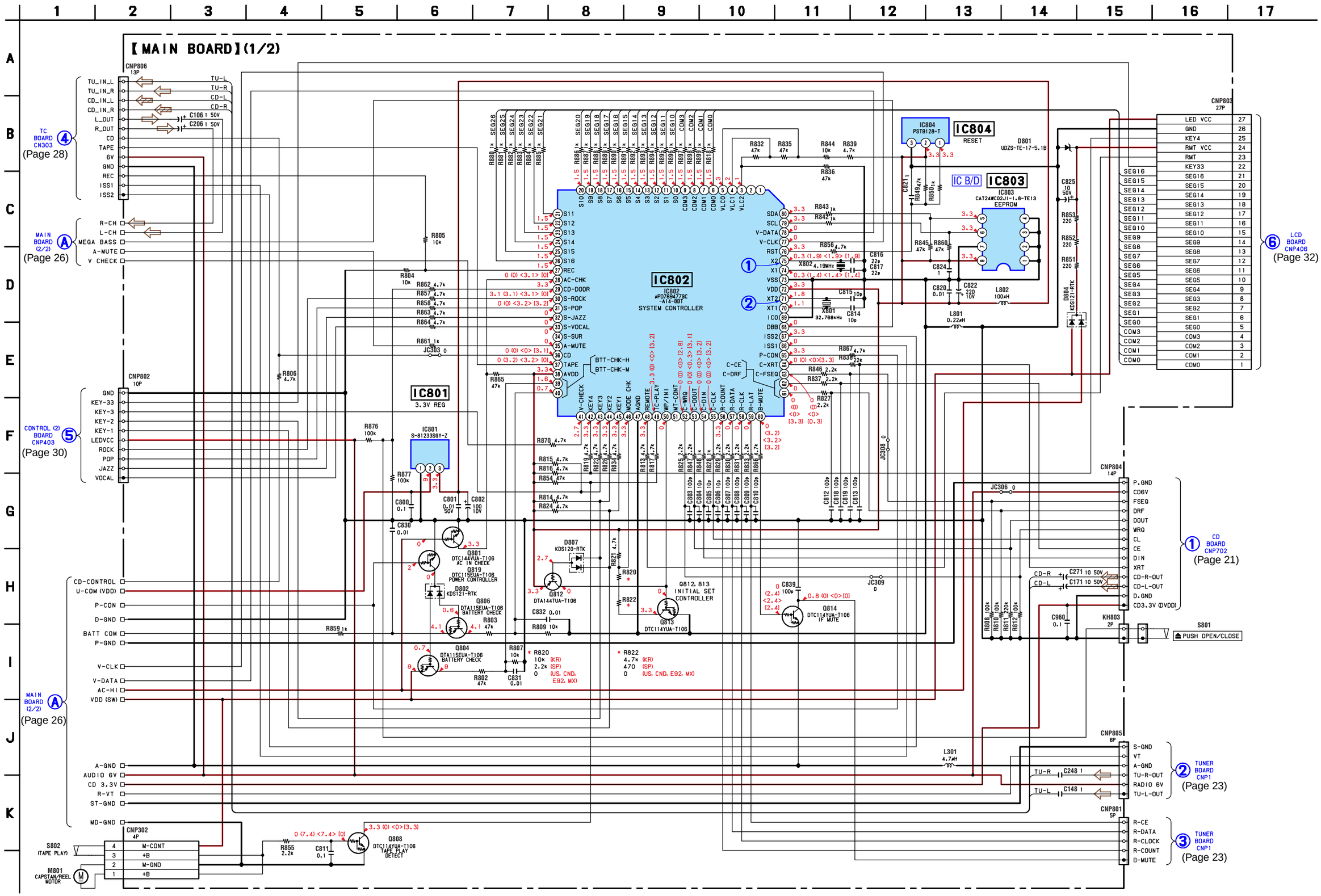
6-9. PRINTED WIRING BOARDS — MAIN SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.

• **Semiconductor Location**

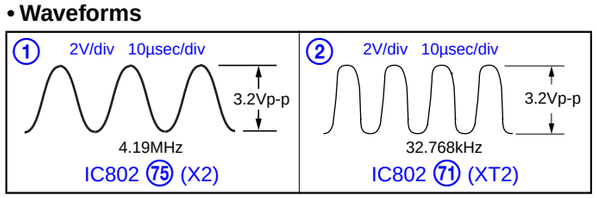
Ref. No.	Location
D322	E-3
D323	C-6
D324	E-8
D801	F-9
D802	G-6
D804	E-9
D807	F-5
D951	B-8
D953	B-6
D957	E-7
IC303	C-3
IC304	B-4
IC801	D-3
IC802	F-4
IC803	F-3
IC804	E-3
Q122	C-5
Q124	C-4
Q222	C-5
Q224	C-4
Q801	G-6
Q804	G-6
Q806	F-5
Q808	G-8
Q812	E-5
Q813	E-5
Q814	D-4
Q819	G-6
Q951	C-8
Q952	C-8
Q953	C-9
Q955	A-5
Q957	E-8
Q958	E-8
Q959	F-8



6-10. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 20 for Common Note on Schematic Diagrams and page 37 for IC Block Diagrams.

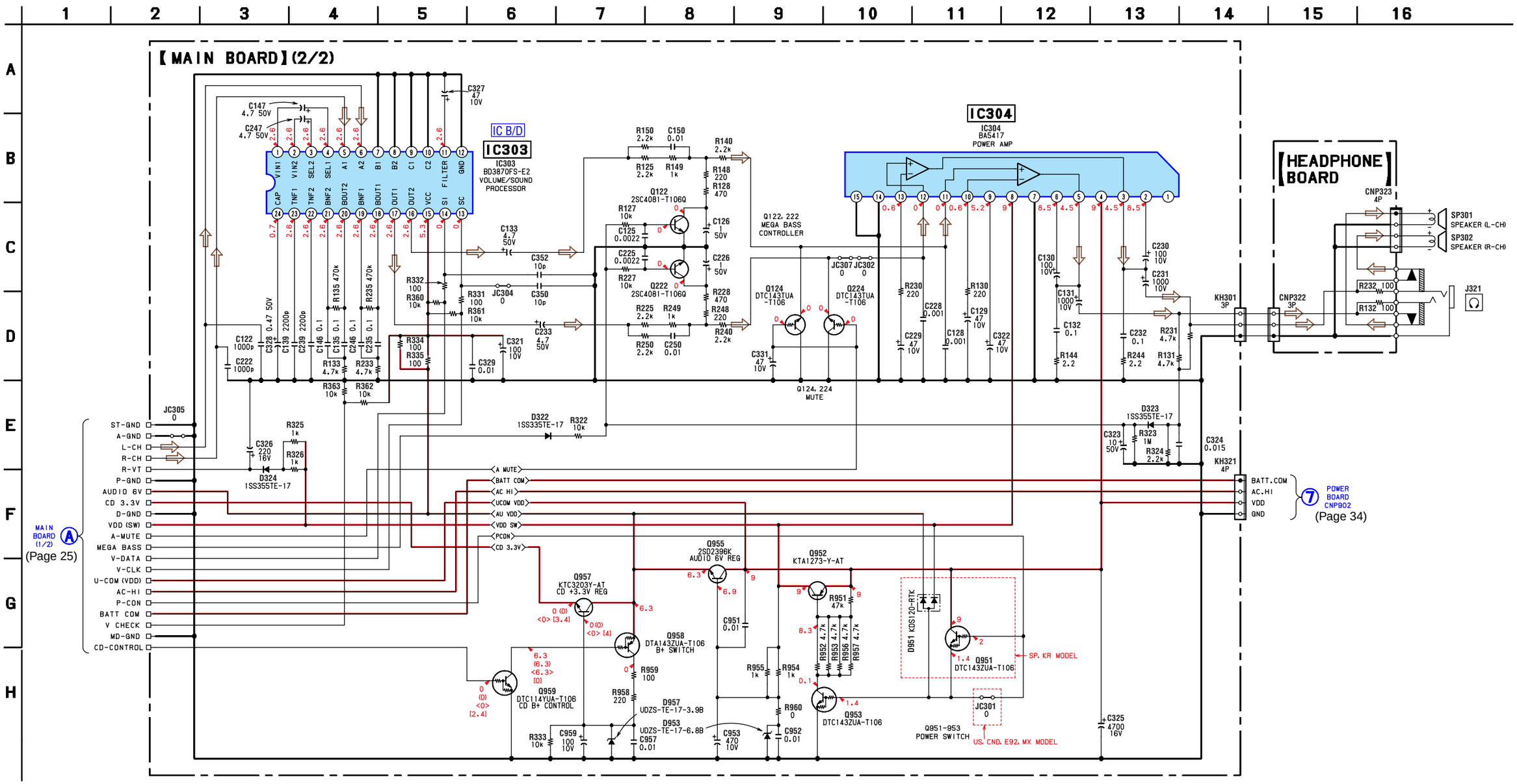


• Waveforms



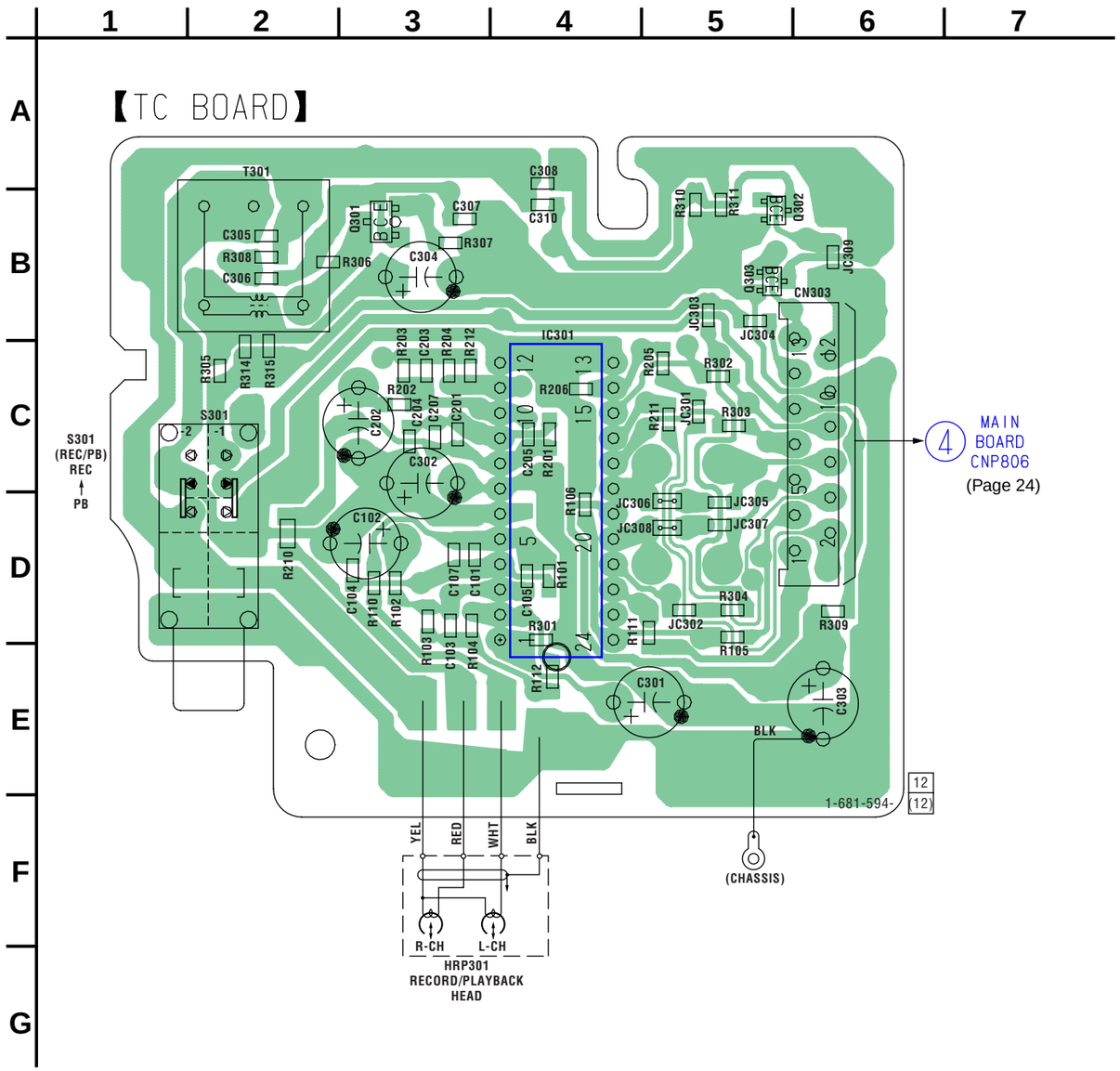
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : PB
  < > : REC
  [ ] : CD PLAY

6-11. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 20 for Common Note on Schematic Diagrams and page 37 for IC Block Diagrams.



- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : PB
  < > : REC
  [ ] : CD PLAY

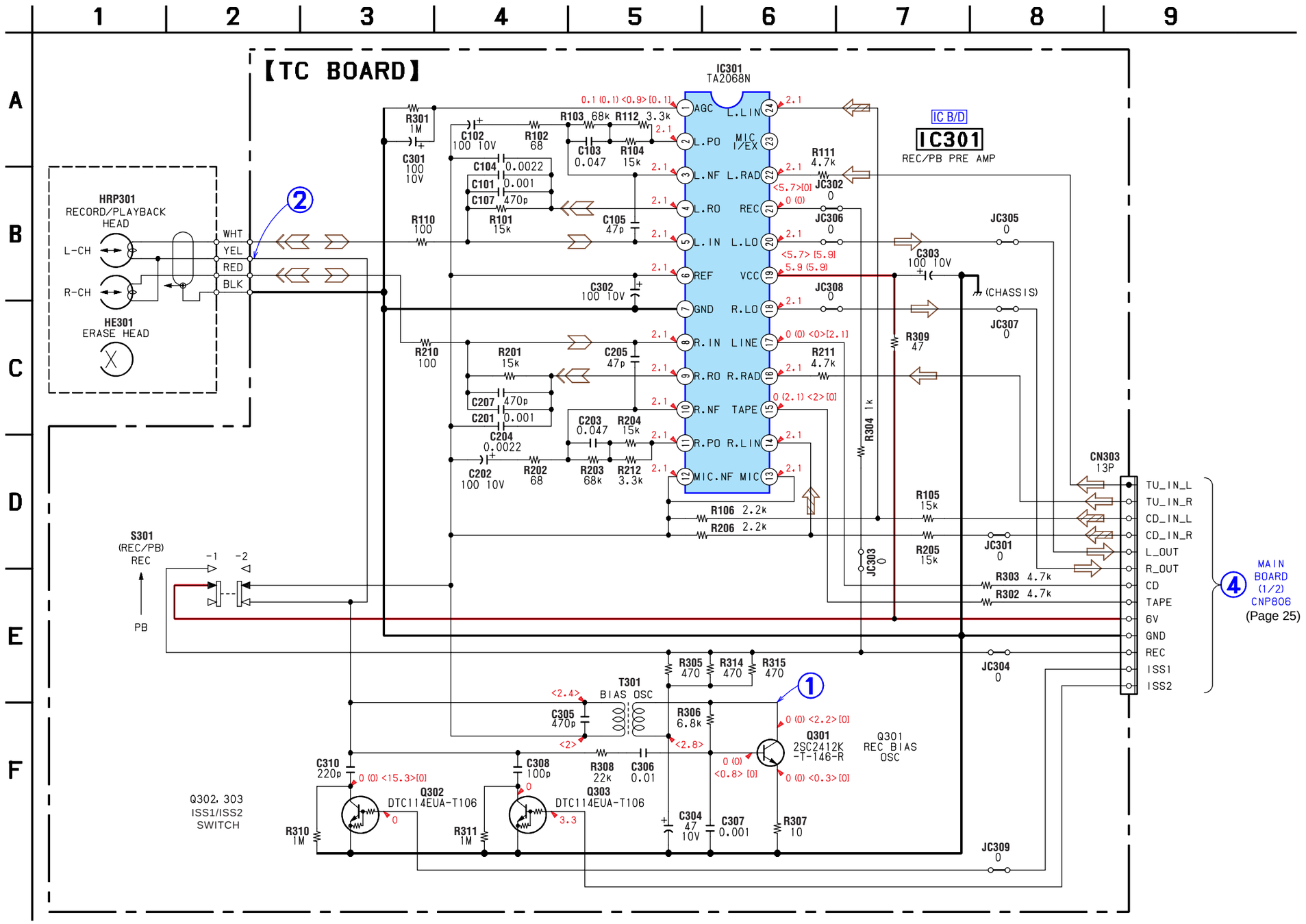
6-12. PRINTED WIRING BOARD — TC SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.



• **Semiconductor Location**

Ref. No.	Location
IC301	C-4
Q301	B-3
Q302	B-5
Q303	B-5

6-13. SCHEMATIC DIAGRAM — TC SECTION — • Refer to page 20 for Common Note on Schematic Diagrams and page 37 for IC Block Diagrams.

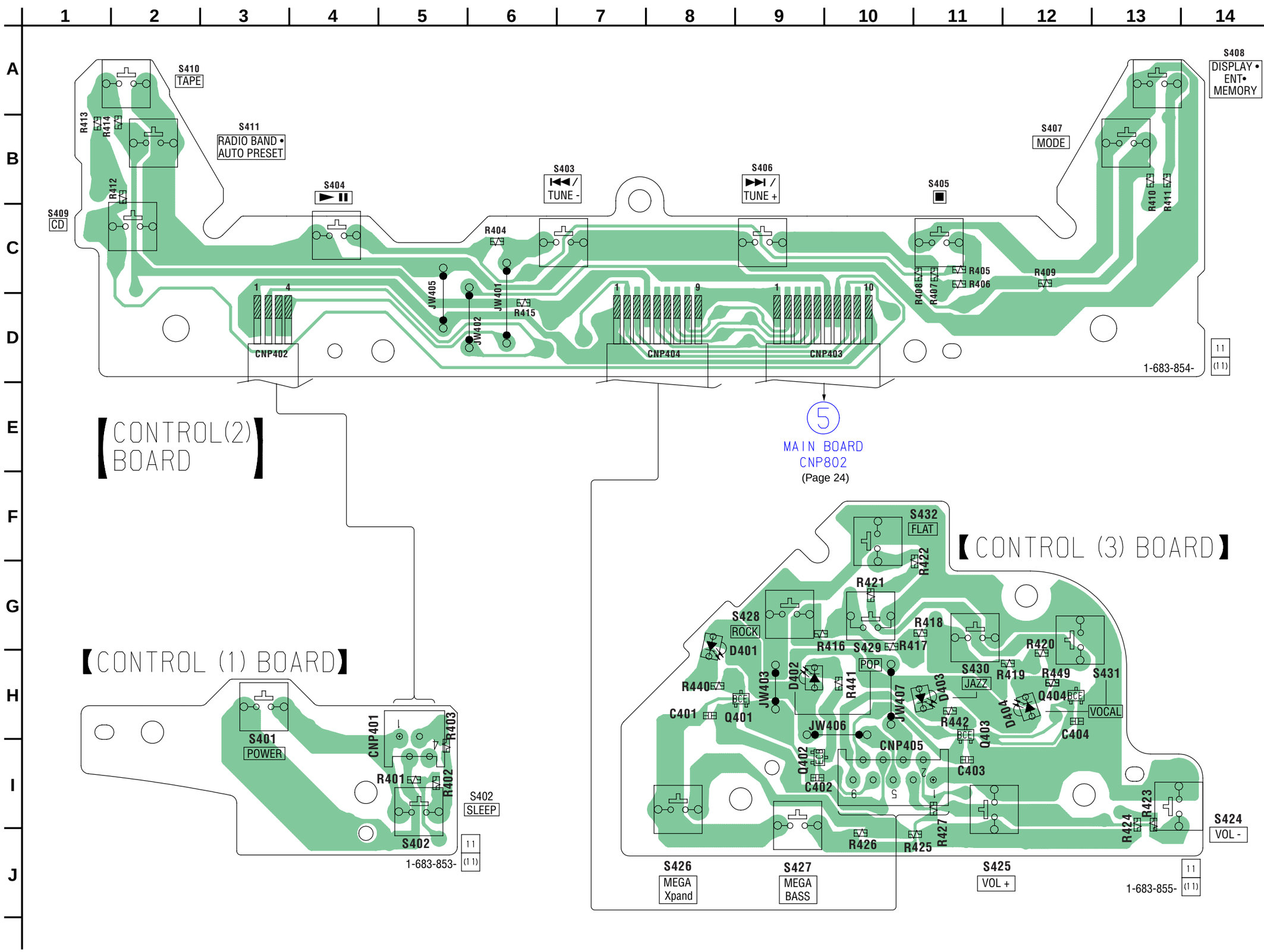


• Waveform

① 0.1V/div 5µsec/div	② 10V/div 5µsec/div
4Vp-p, 19.5µsec	40Vp-p, 19.5µsec
Q301 Ⓒ (REC)	T301, HRP301 (YEL)

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : PB
  < > : REC
  [ ] : CD PLAY

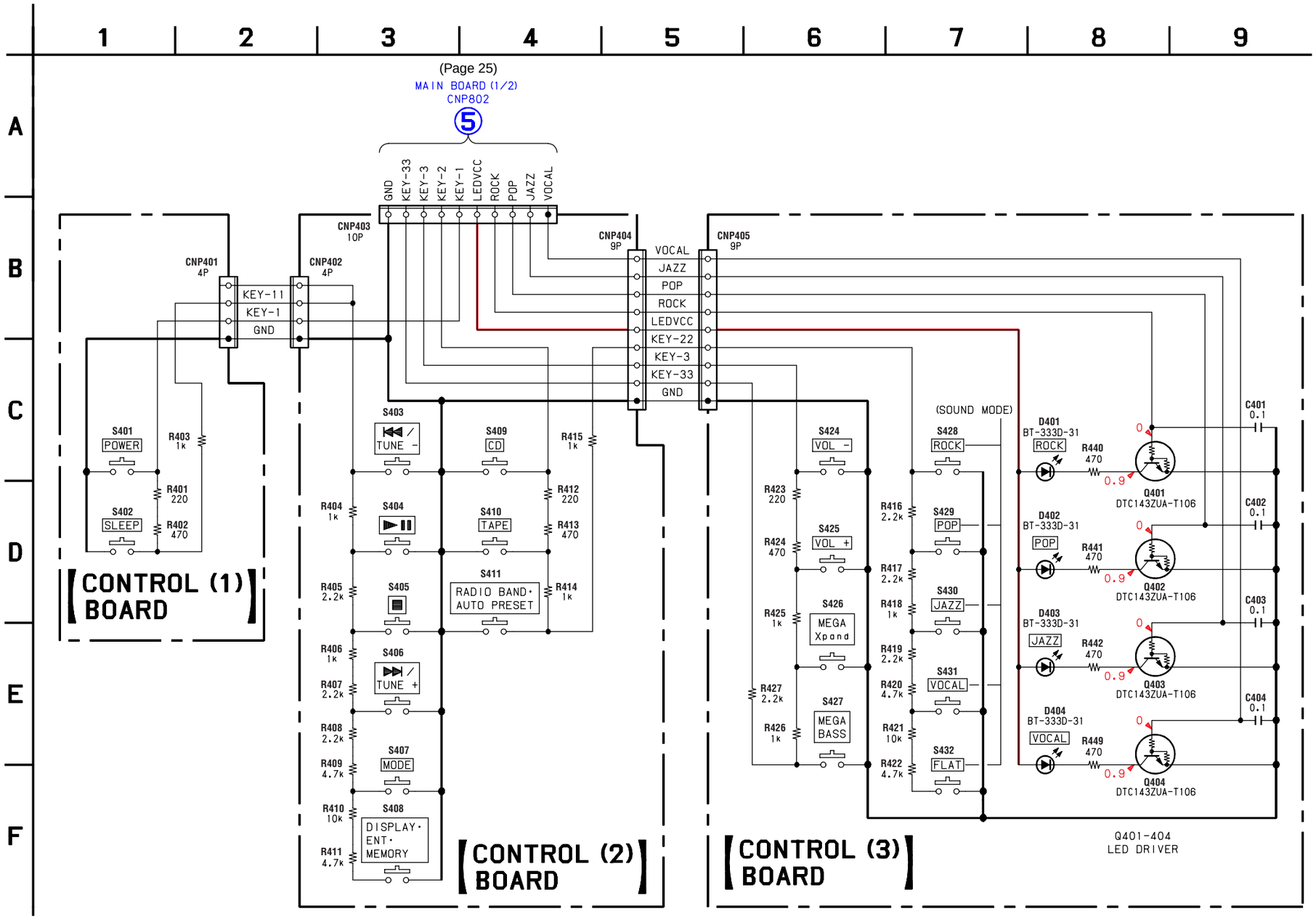
6-14. PRINTED WIRING BOARDS — CONTROL SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.



• **Semiconductor Location**

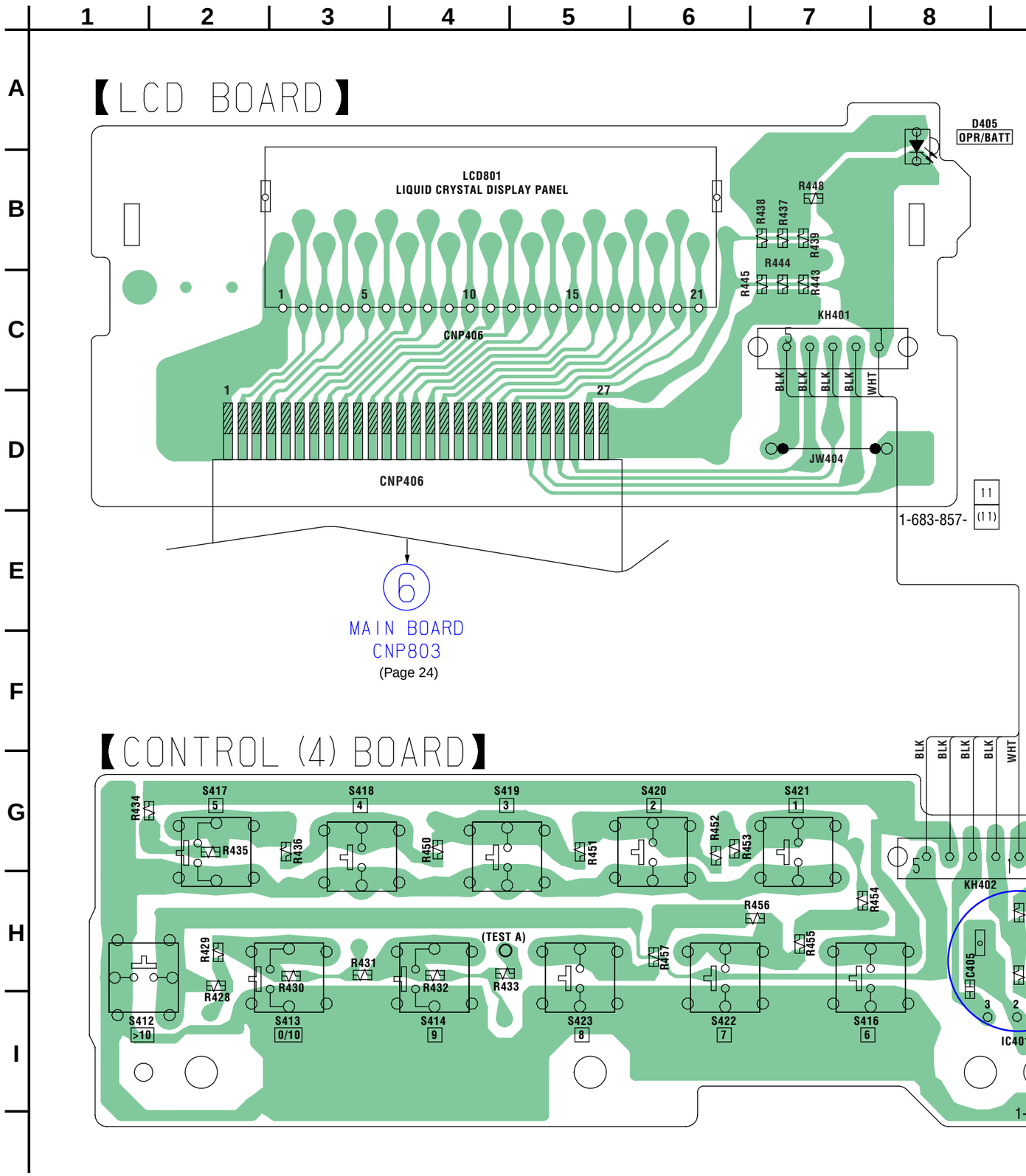
Ref. No.	Location
D401	G-8
D402	H-9
D403	H-11
D404	H-12
Q401	H-9
Q402	I-9
Q403	I-11
Q404	H-12

6-15. SCHEMATIC DIAGRAM — CONTROL SECTION — • Refer to page 20 for Common Note on Schematic Diagrams.



• Voltage is dc with respect to ground under no-signal (detuned) condition.
no mark : FM

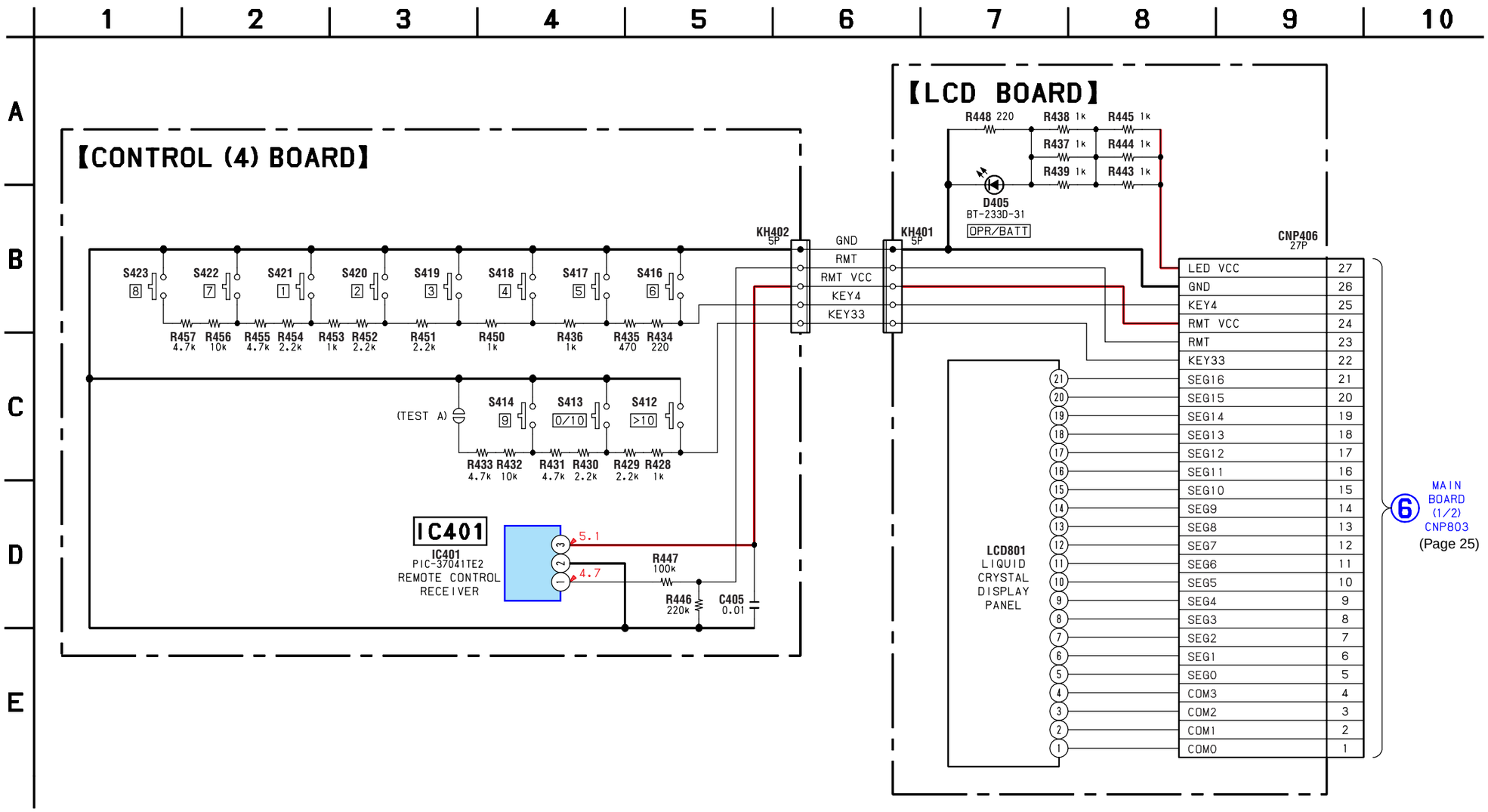
6-16. PRINTED WIRING BOARDS — DISPLAY SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.



• **Semiconductor Location**

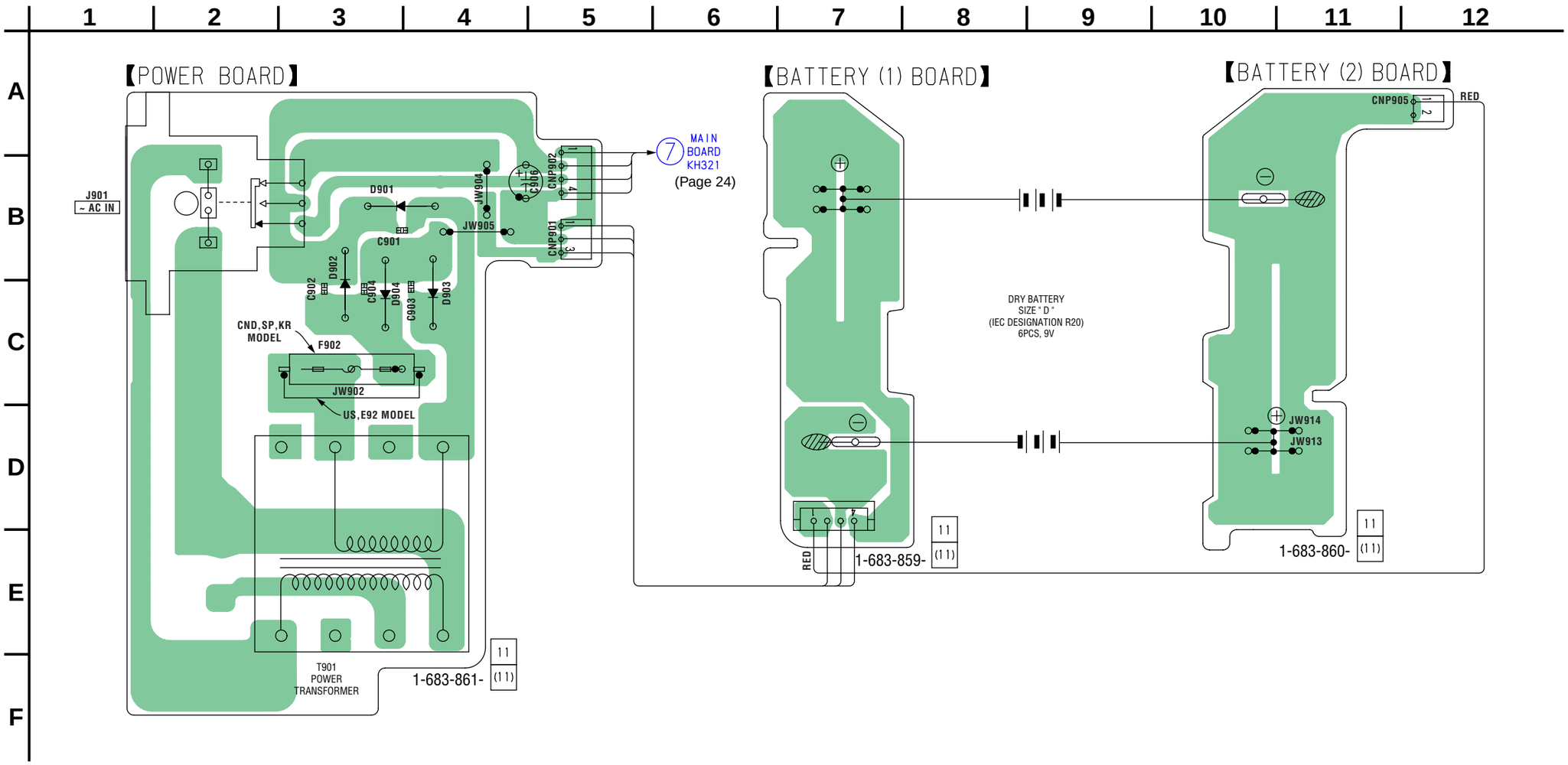
Ref. No.	Location
D405	A-8
IC401	H-9

6-17. SCHEMATIC DIAGRAM — DISPLAY SECTION — • Refer to page 20 for Common Note on Schematic Diagrams.



• Voltage is dc with respect to ground under no-signal (detuned) condition.
no mark : FM

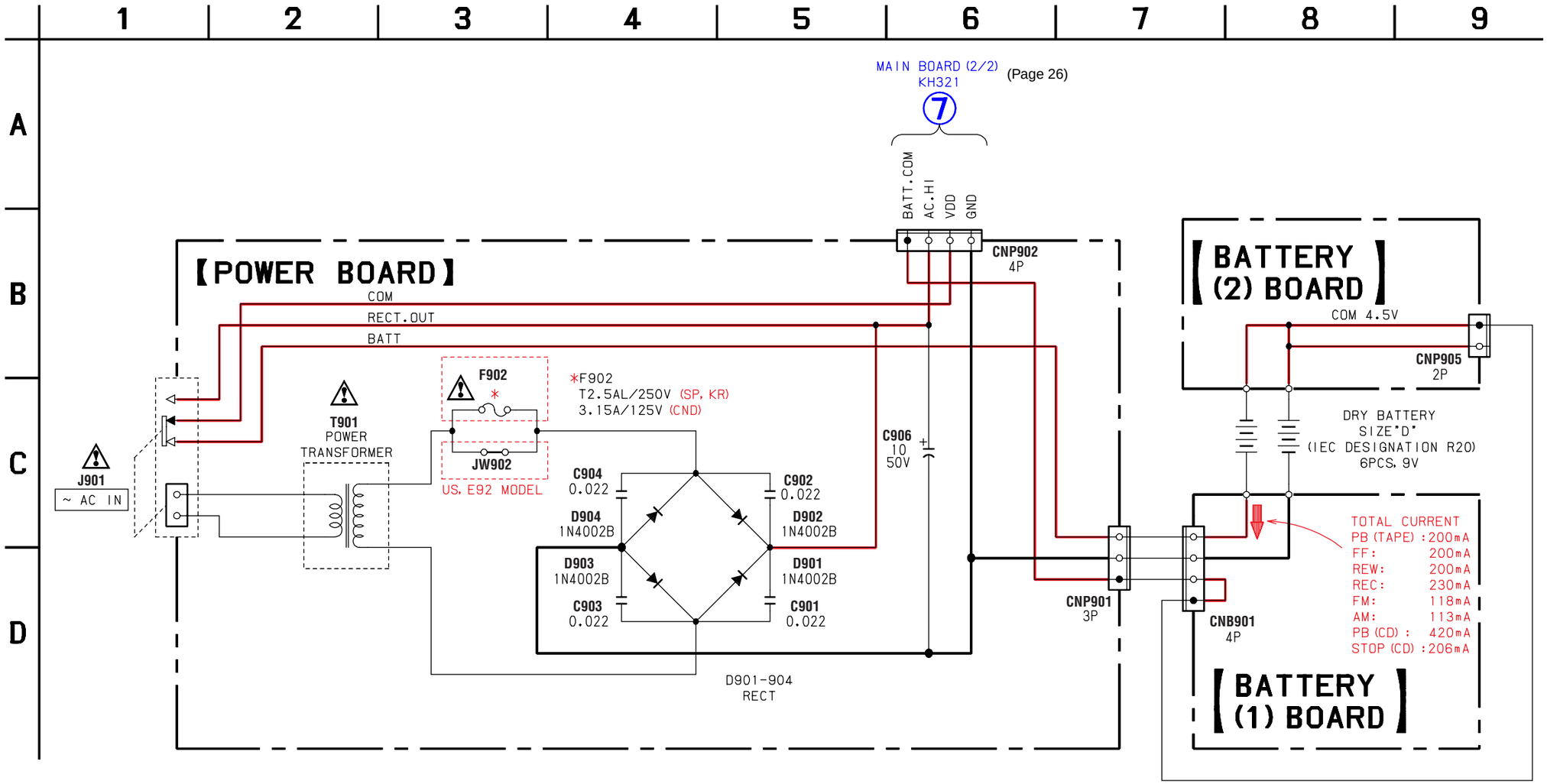
6-18. PRINTED WIRING BOARDS — POWER SUPPLY SECTION — • Refer to page 17 for Circuit Boards Location and page 20 for Common Note on Printed Wiring Boards.



- **Semiconductor Location**

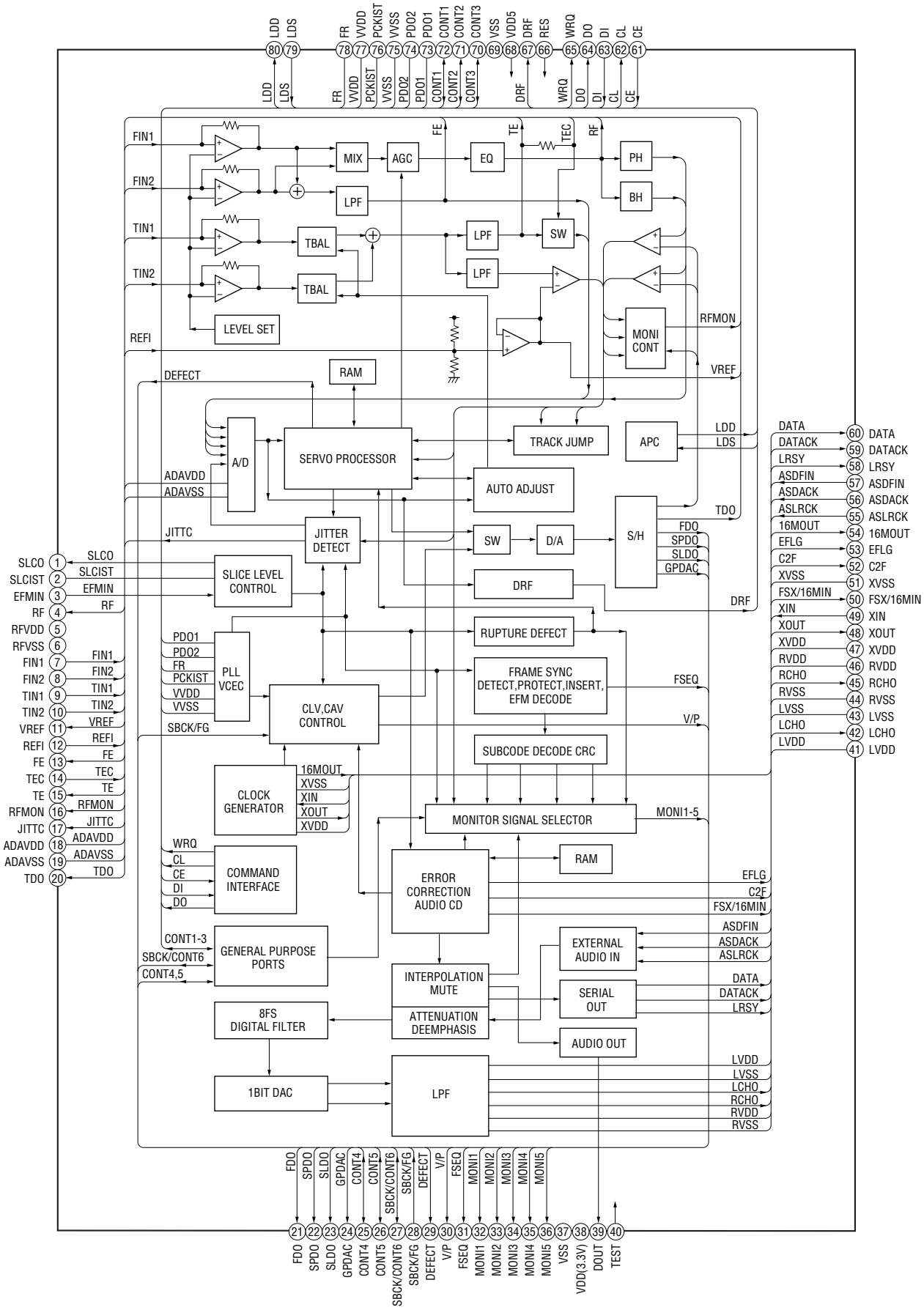
Ref. No.	Location
D901	B-3
D902	B-3
D903	C-4
D904	C-3

6-19. SCHEMATIC DIAGRAM — POWER SUPPLY SECTION — • Refer to page 20 for Common Note on Schematic Diagrams.

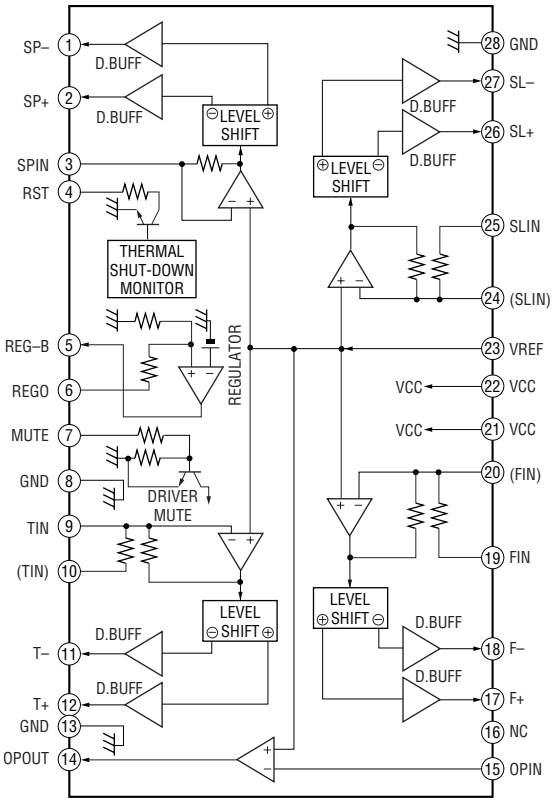


6-20. IC BLOCK DIAGRAMS

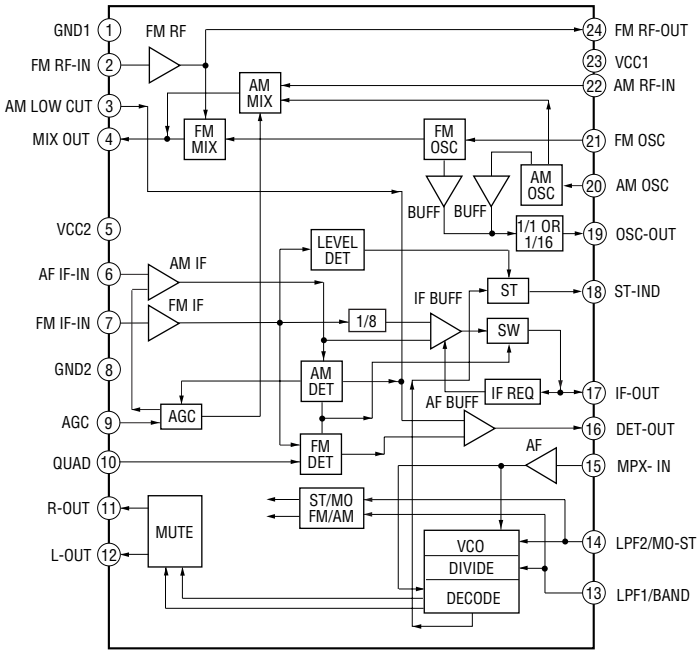
IC701 LC78646E-E (CD Board)



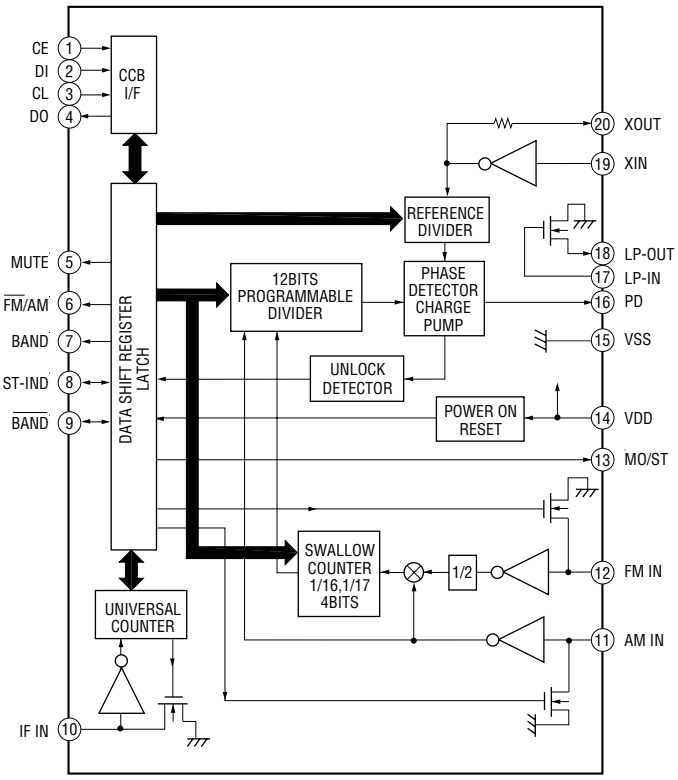
IC702 BA5826FP-E2 (CD Board)



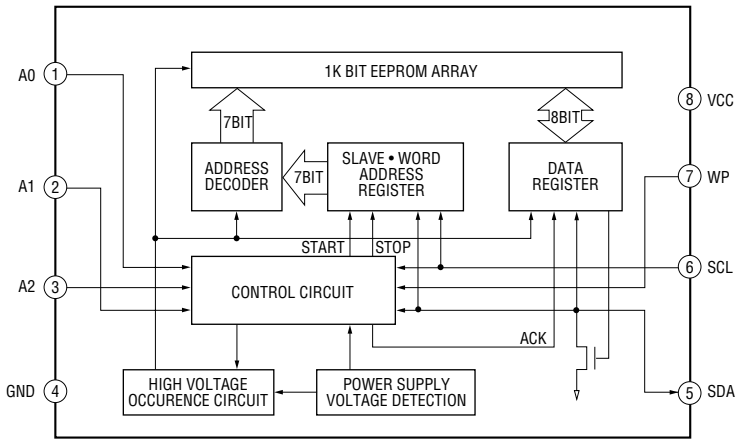
IC1 TA2149BN (TUNER Board)



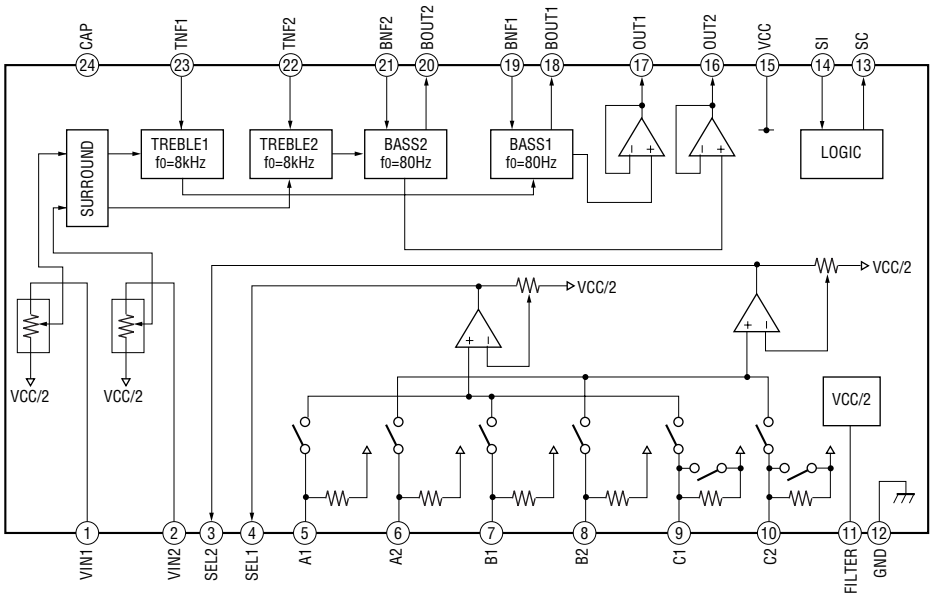
IC2 LC72137M-TLM (TUNER Board)



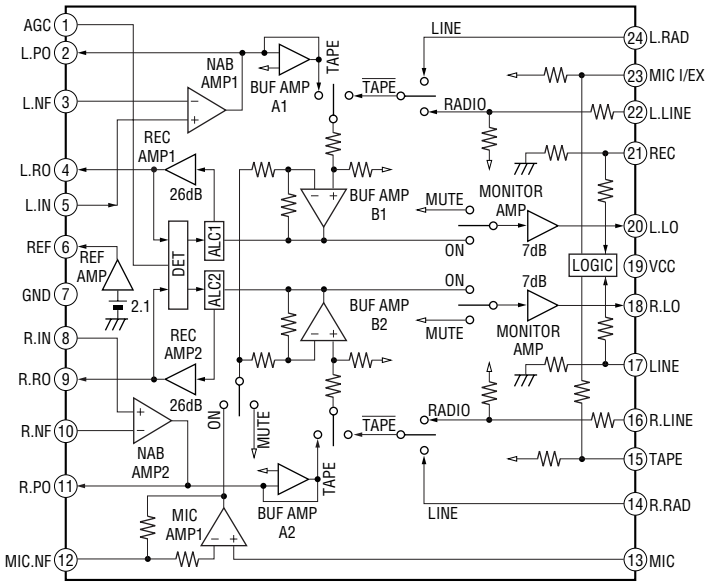
IC803 CAT24WC02JI-1.8-TE13 (MAIN Board)



IC303 BD3870FS-E2 (MAIN Board)



IC301 TA2068N (TC Board)



SECTION 7
EXPLODED VIEWS

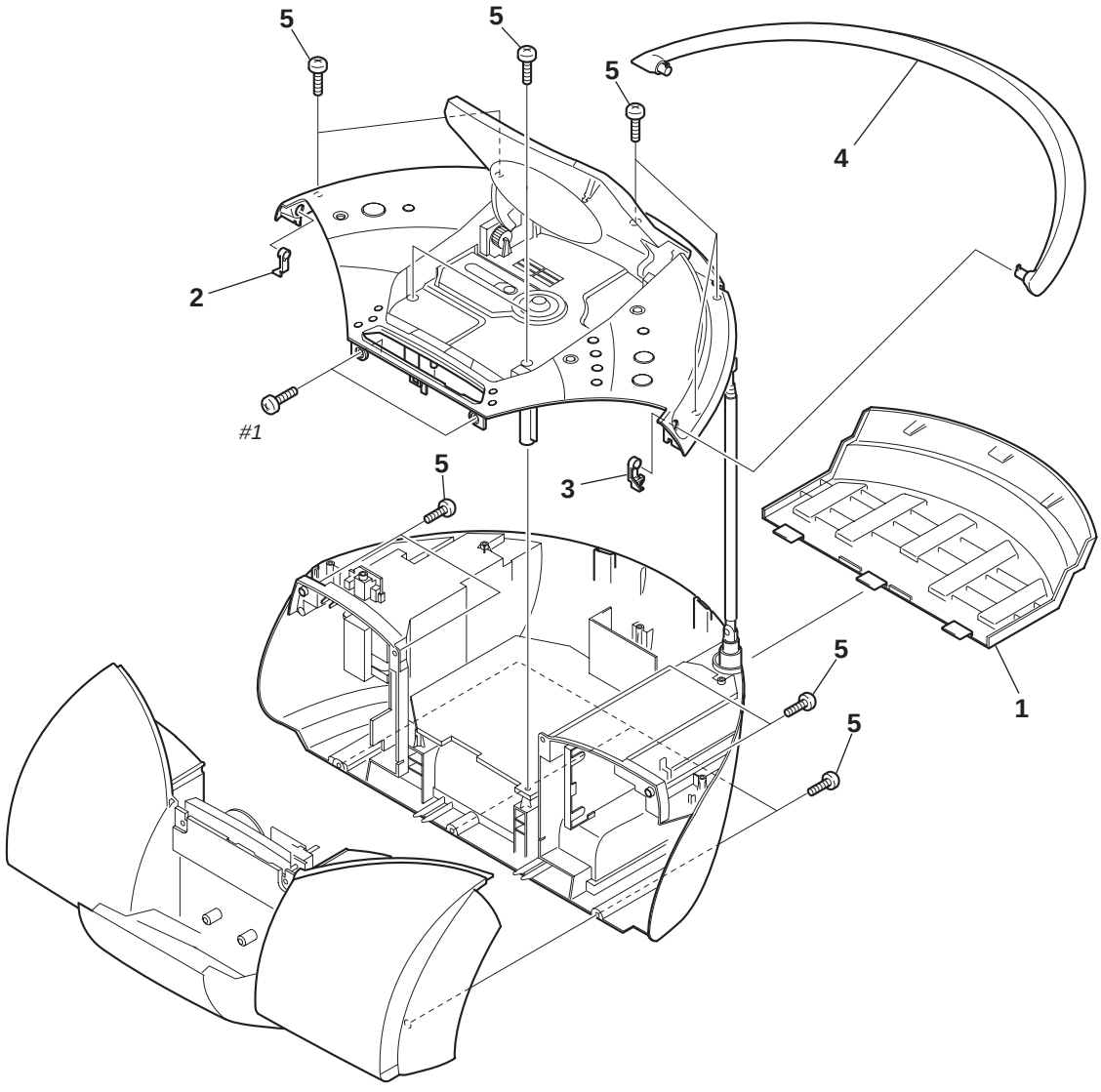
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  CND : Canadian model
  E92 : AC 120V area in E model
  MX : Mexican model
  SP : Singapore model
  KR : Korean model

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

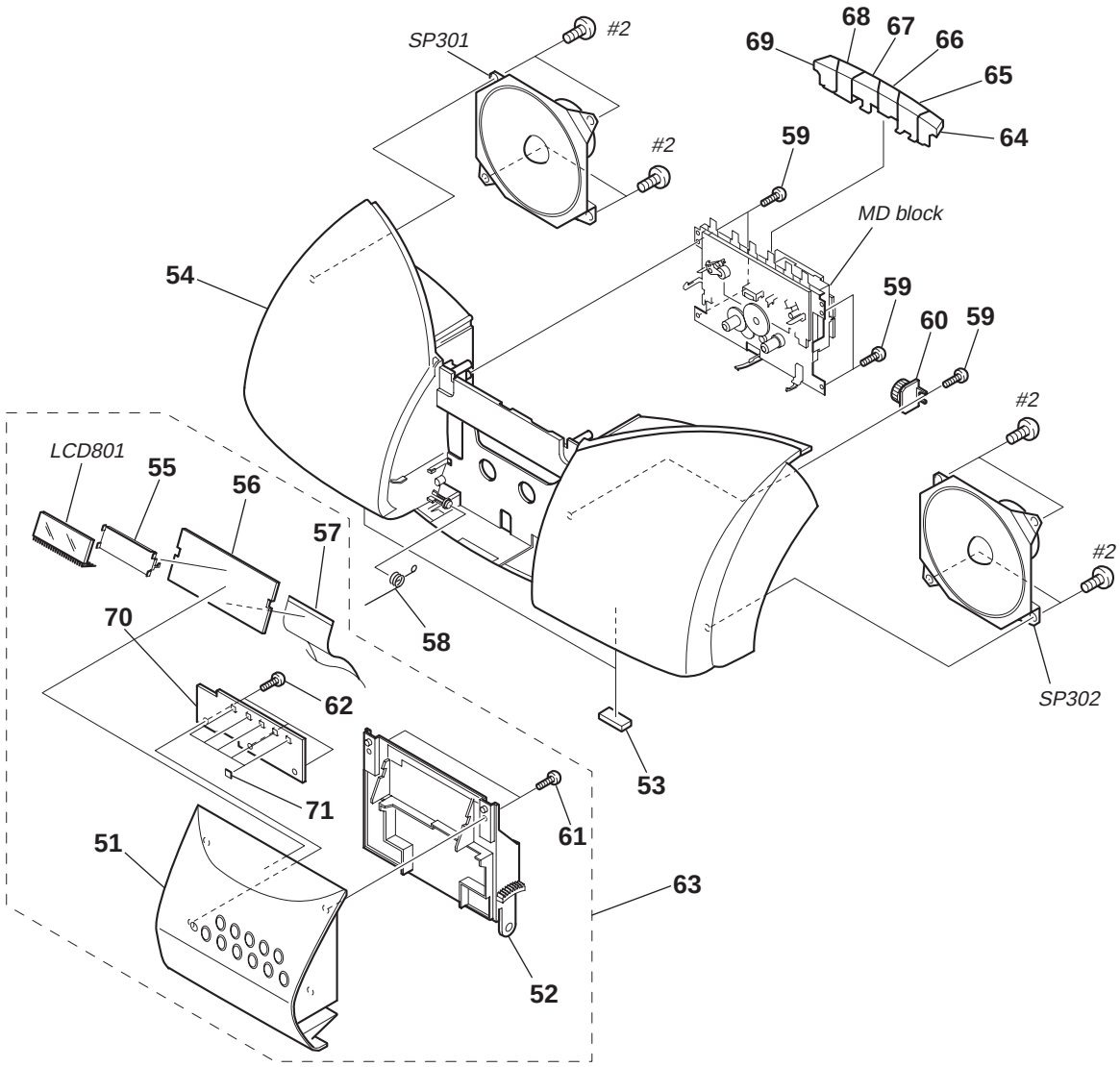
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

7-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	3-237-699-11	LID, BATTERY	
2	3-237-726-01	PLATE (L) (S500)	
2	3-237-726-11	PLATE (L) (S400)	
3	3-237-727-01	PLATE (R) (S500)	
3	3-237-727-11	PLATE (R) (S400)	
4	3-237-700-01	HANDLE (S500)	
4	3-237-700-11	HANDLE (S400)	
5	4-951-620-81	SCREW (2.6)	
#1	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S	

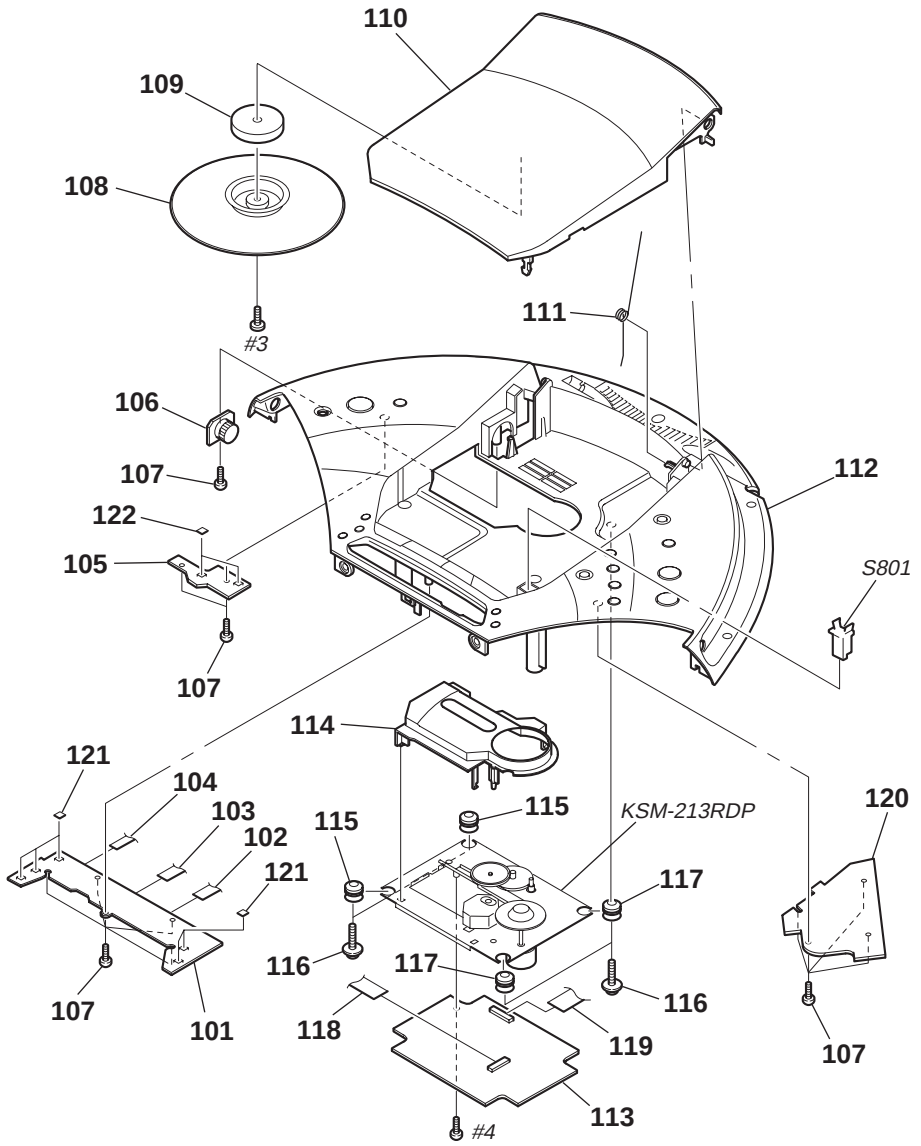
7-2. CABINET FRONT SECTION



Ref. No.	Part No.	Description	Remark
51	X-3381-559-1	DOOR SUB ASSY, CASSETTE	
52	3-237-694-31	HOLDER, CASSETTE	
53	3-040-916-01	FOOT (FRONT), RUBBER	
* 54	X-3381-555-1	FRONT SUB ASSY, CABINET (S500)	
54	X-3381-810-1	FRONT SUB ASSY, CABINET (S400)	
55	3-237-717-01	HOLDER, LCD	
* 56	1-683-857-11	LCD BOARD	
57	1-824-037-11	CABLE, FLEXIBLE FLAT 27P (CNP406)	
58	3-237-725-01	SPRING, CASSETTE	
59	4-951-620-11	SCREW (2.6X10), +BVTP	
60	3-922-112-41	DAMPER	
61	4-951-620-31	SCREW (2.6), +BVTP	
62	4-951-620-01	SCREW (2.6X8), +BVTP	

Ref. No.	Part No.	Description	Remark
* 63	A-3174-265-A	DOOR ASSY, CASSETTE	
64	3-237-707-31	BUTTON, REC	
65	3-237-706-31	BUTTON, PLAY	
66	3-237-704-31	BUTTON, REW	
67	3-237-705-31	BUTTON, FF	
68	3-237-703-31	BUTTON, S/E	
69	3-237-702-31	BUTTON, PAUSE	
* 70	1-683-856-11	CONTROL (4) BOARD	
71	3-831-441-11	CUSHION (B)	
LCD801	1-804-550-11	DISPLAY PANEL, LIQUID CRYSTAL	
SP301	1-825-031-11	SPEAKER (10cm) (L-CH)	
SP302	1-825-031-11	SPEAKER (10cm) (R-CH)	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	

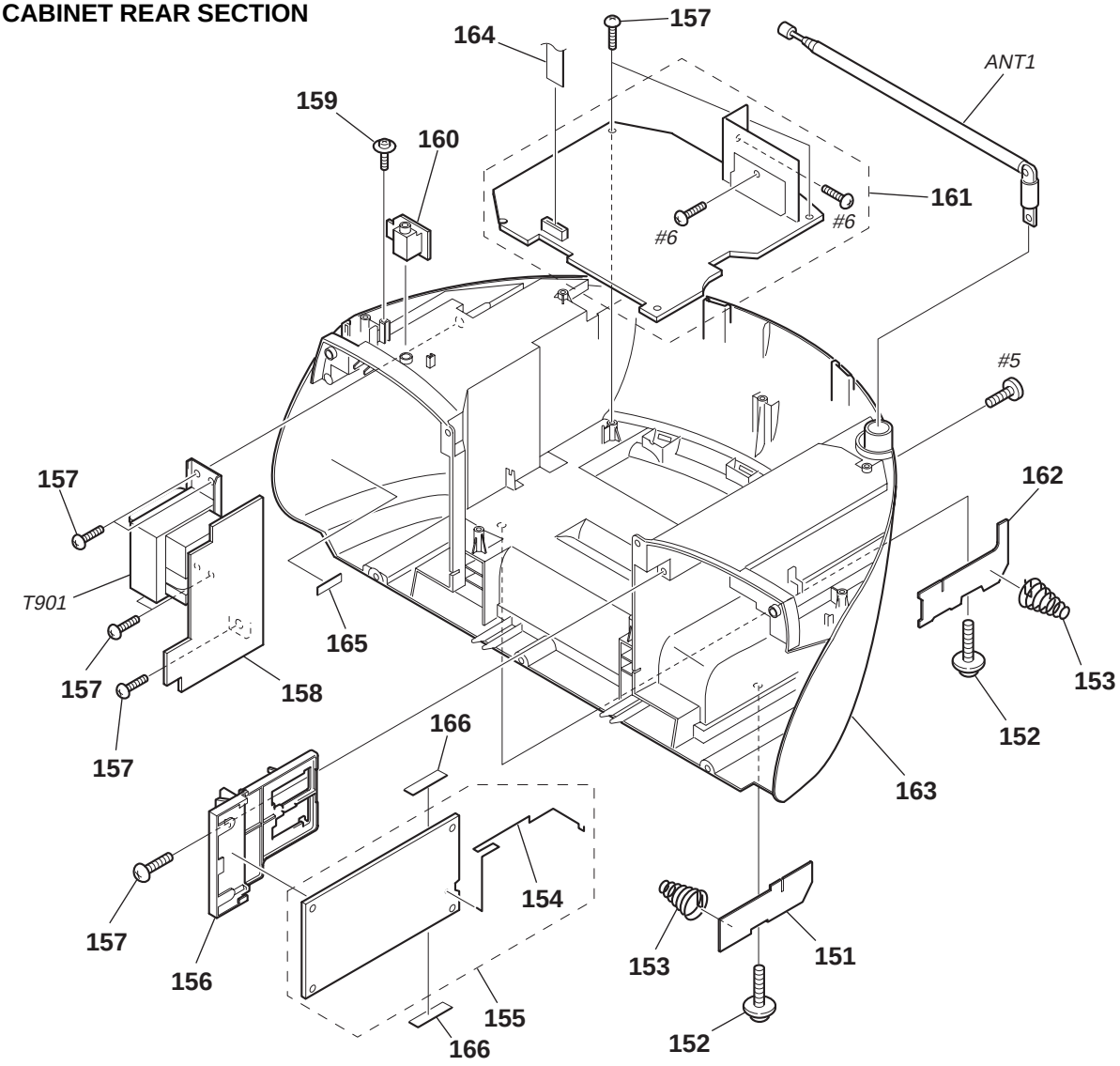
7-3. CABINET TOP SECTION



Ref. No.	Part No.	Description	Remark
* 101	1-683-854-11	CONTROL (2) BOARD	
102	1-824-038-11	CABLE, FLEXIBLE FLAT 10P (CNP403)	
103	1-824-039-11	CABLE, FLEXIBLE FLAT 9P (CNP404)	
104	1-824-035-11	CABLE, FLEXIBLE FLAT 4P (CNP402)	
* 105	1-683-853-11	CONTROL (1) BOARD	
106	3-922-112-41	DAMPER	
107	4-951-620-01	SCREW (2.6X8), +BVTP	
108	3-019-395-01	PLATE, CHUCKING	
109	1-452-899-11	MAGNET	
110	3-237-701-71	LID, CD	
111	3-237-723-01	SPRING, CD	
* 112	X-3381-563-1	TOP SUB ASSY, CABINET (S500)	
112	X-3381-811-1	TOP SUB ASSY, CABINET (S400)	
* 113	A-3178-122-A	CD BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
114	3-923-736-01	COVER, CD	
115	3-931-379-21	RUBBER, VIBRATION PROOF	
116	3-921-725-11	SCREW (2.6X10), +PWH	
117	3-931-379-31	RUBBER, VIBRATION PROOF	
118	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)	
119	1-824-034-11	CABLE, FLEXIBLE FLAT 14P	
* 120	1-683-855-11	CONTROL (3) BOARD	
121	3-220-756-01	CUSHION (BUTTON)	
122	3-831-441-11	CUSHION (B)	
S801	1-692-960-11	SWITCH, PUSH (1 KEY)	(⏏ PUSH OPEN/CLOSE)
#3	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#4	7-685-853-04	SCREW +BVTT 2X6 (S)	

7-4. CABINET REAR SECTION

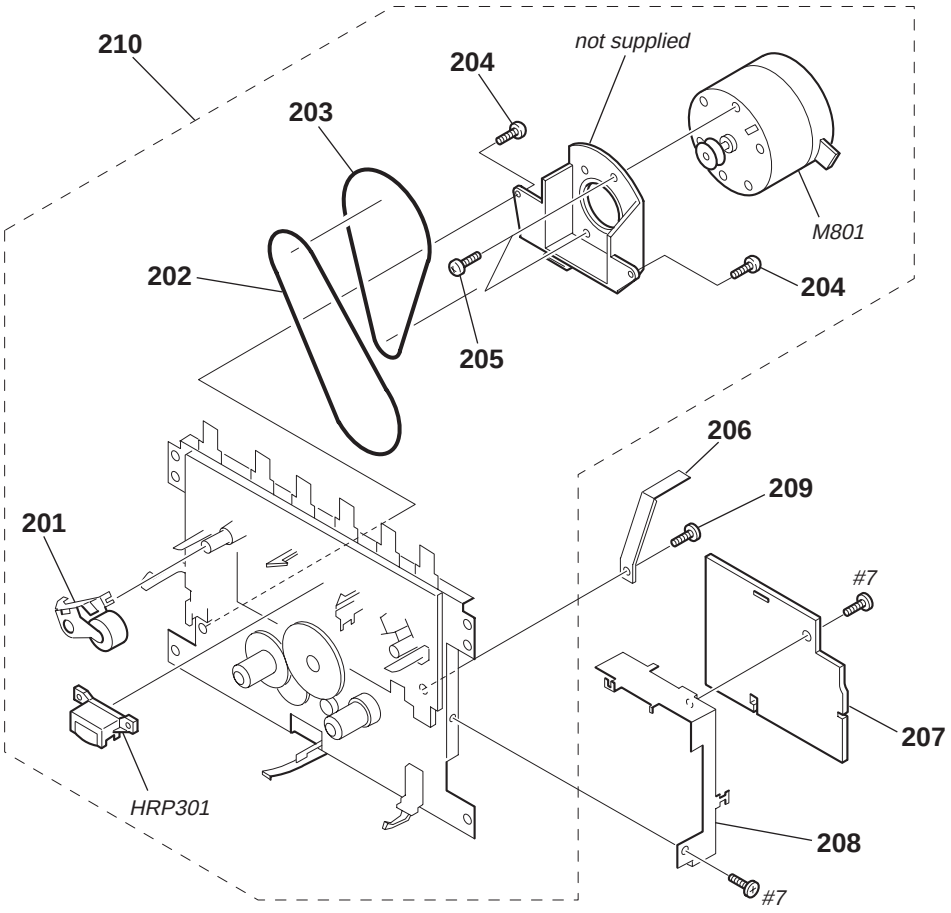


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
* 151	1-683-859-11	BATTERY (1) BOARD	
152	4-960-167-01	SCREW (3X8) (DIA.10), +WH	
153	3-240-561-01	TERMINAL (–), BATTERY	
154	3-237-724-01	TERMINAL, ANTENNA (CNP2)	
* 155	A-3323-778-A	TUNER BOARD, COMPLETE (US,CND,E92,MX)	
* 155	A-3323-815-A	TUNER BOARD, COMPLETE (SP,KR)	
156	3-237-716-01	CHASSIS, TU	
157	4-951-620-11	SCREW (2.6X10), +BVTP	
* 158	1-683-861-11	POWER BOARD	
159	3-921-725-11	SCREW (2.6X10), +PWH	
* 160	1-683-858-11	HEADPHONE BOARD	
* 161	A-3178-147-A	MAIN BOARD, COMPLETE (US)	
* 161	A-3178-445-A	MAIN BOARD, COMPLETE (CND)	
* 161	A-3178-512-A	MAIN BOARD, COMPLETE (E92,MX)	
* 161	A-3178-773-A	MAIN BOARD, COMPLETE (SP)	
* 161	A-3323-945-A	MAIN BOARD, COMPLETE (KR)	

Ref. No.	Part No.	Description	Remark
* 162	1-683-860-11	BATTERY (2) BOARD	
163	3-237-697-31	REAR, CABINET (S500)	
163	3-237-697-51	REAR, CABINET (CND,E92,MX)	
163	3-240-597-41	REAR, CABINET (SP,KR)	
164	1-824-031-11	CABLE, FLEXIBLE FLAT 13P	
* 165	3-703-044-26	LABEL, CAUTION (CND)	
166	3-831-441-99	SPACER	
ANT1	1-754-241-11	ANTENNA, TELESCOPIC (FM)	
⚠T901	1-435-917-11	TRANSFORMER, POWER (US,E92,MX)	
⚠T901	1-435-918-11	TRANSFORMER, POWER (SP,KR)	
⚠T901	1-437-540-11	TRANSFORMER, POWER (CND)	
#5	7-682-548-04	SCREW +B 3X8	
#6	7-685-646-79	SCREW, TAPPING +BV 3X8	

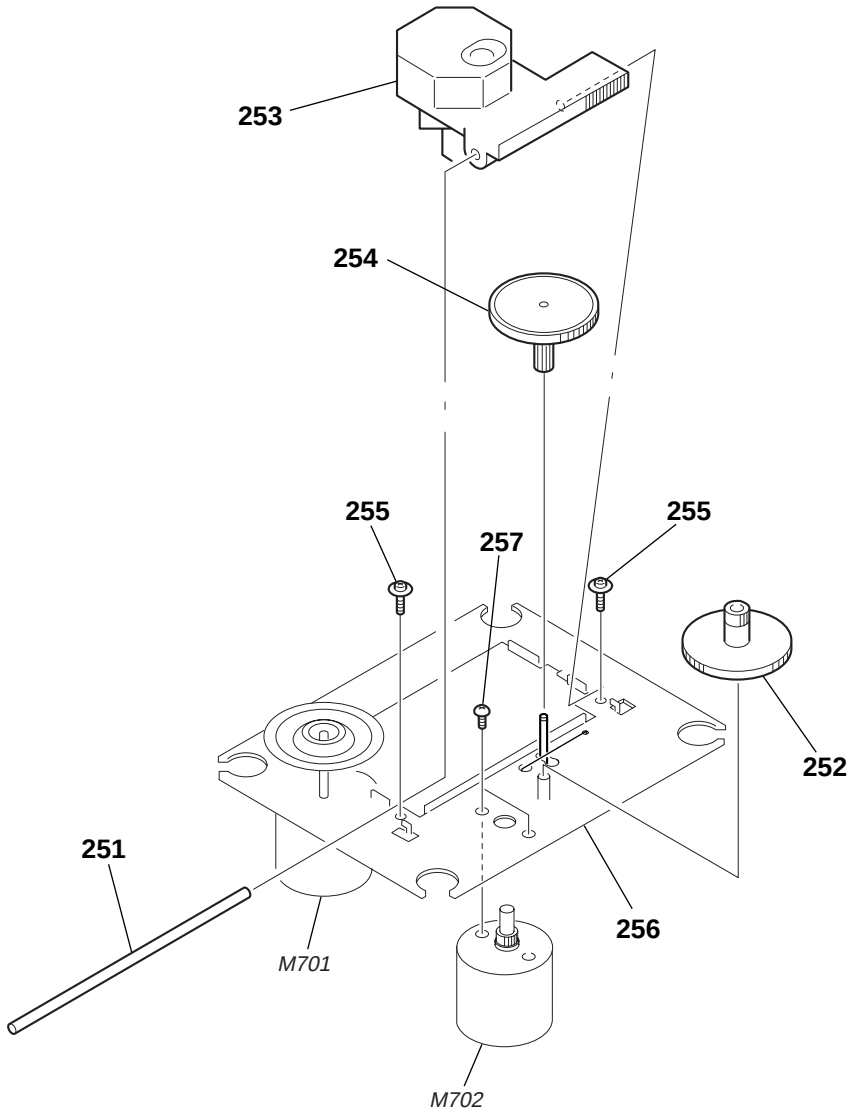
7-5. TAPE MECHANISM SECTION



Ref. No.	Part No.	Description	Remark
201	3-244-086-01	ARM ASSY, PINCH ROLLER	
202	3-244-079-01	BELT (B), SUB	
203	3-244-080-01	BELT (B), MAIN	
204	3-244-083-01	SCREW BIND DT M2X6	
205	3-244-084-01	SCREW PAN M2.6X4.5	
206	3-237-718-01	LEVER, REC	
* 207	A-3323-806-A	TC BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
208	3-237-719-01	CHASSIS, TC	
209	3-030-741-01	SCREW (M2X2)	
210	A-3013-956-A	MF-S200	
HRP301	3-244-085-01	HEAD, R/P (REC/PB)	
M801	3-244-082-01	MOTOR ASSY (CAPSTAN/REEL)	
#7	7-685-851-04	SCREW +BVTT 2X4 (S)	

7-6. CD MECHANISM SECTION (KSM-213RDP)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
251	2-626-908-01	SHAFT, SLED	
* 252	2-647-408-02	GEAR (B)	
⚠253	8-820-161-02	PICK-UP, OPTICAL KSS-213R/C2RP	
* 254	2-169-065-01	GEAR (A)	
255	2-169-388-01	TAPPING (M2), +PWB	
256	X-2162-707-1	CHASSIS ASSY (RDP) (RP), MOTOR (SPINDLE) (including M701)	
257	3-713-786-51	SCREW (M2X3)	
M702	X-2162-712-1	GEAR ASSY (R) (RP), MOTOR (SLED)	

SECTION 8
ELECTRICAL PARTS LIST

BATTERY (1)

BATTERY (2) **CD**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  CND : Canadian model
  MX : Mexican model
  SP : Singapore model
  E92 : AC 120V area in E model
  KR : Korean model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-683-859-11	BATTERY (1) BOARD			
		**********			
	3-240-561-01	TERMINAL (–), BATTERY			
**********					
*	1-683-860-11	BATTERY (2) BOARD			
		**********			
	3-240-561-01	TERMINAL (–), BATTERY			
		< CONNECTOR >			
* CNP905	1-815-550-11	PIN, CONNECTOR (PC BOARD) 2P			
**********					
*	A-3178-122-A	CD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C701	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C702	1-126-947-11	ELECT	47uF	20%	10V
C703	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C704	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C705	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C706	1-126-960-11	ELECT	1uF	20%	50V
C707	1-115-156-11	CERAMIC CHIP	1uF		10V
C708	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C709	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C711	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C716	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C717	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C720	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C721	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C722	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C723	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C724	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C725	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C726	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C727	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C728	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C729	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C730	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C731	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C732	1-104-665-11	ELECT	100uF	20%	10V
C733	1-104-665-11	ELECT	100uF	20%	10V
C734	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C735	1-126-916-11	ELECT	1000uF	20%	6.3V
C736	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C738	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C739	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C740	1-126-935-11	ELECT	470uF	20%	10V
C741	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C742	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C743	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C744	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C745	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C746	1-104-665-11	ELECT	100uF	20%	10V
C747	1-104-665-11	ELECT	100uF	20%	10V
C750	1-104-665-11	ELECT	100uF	20%	10V
C751	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C754	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C755	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CNP701	1-779-466-11	CONNECTOR, FFC/FPC 16P			
* CNP702	1-784-736-11	CONNECTOR, FFC 14P			
		< FERRITE BEAD >			
FB701	1-469-701-21	FERRITE, EMI (SMD)			
		< IC >			
IC701	6-701-796-01	IC LC78646E-E			
IC702	6-701-787-11	IC BA5826FP-E2			
		< JUMPER RESISTOR >			
JC701	1-216-864-11	METAL CHIP	0	5%	1/10W
JC702	1-216-864-11	METAL CHIP	0	5%	1/10W
JC703	1-216-864-11	METAL CHIP	0	5%	1/10W
JC704	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< FERRITE BEAD >			
L706	1-414-445-11	FERRITE, EMI (SMD)			
		< TRANSISTOR >			
Q701	8-729-054-57	TRANSISTOR KTN2907AS-RTK			
		< RESISTOR >			
R701	1-216-841-11	METAL CHIP	47K	5%	1/10W
R702	1-216-835-11	METAL CHIP	15K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R703	1-216-835-11	METAL CHIP	15K	5%	1/10W
R704	1-216-835-11	METAL CHIP	15K	5%	1/10W
R705	1-216-835-11	METAL CHIP	15K	5%	1/10W
R706	1-216-841-11	METAL CHIP	47K	5%	1/10W
R707	1-216-797-11	METAL CHIP	10	5%	1/10W
R708	1-216-833-11	METAL CHIP	10K	5%	1/10W
R709	1-216-837-11	METAL CHIP	22K	5%	1/10W
R710	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R711	1-216-815-11	METAL CHIP	330	5%	1/10W
R712	1-216-809-11	METAL CHIP	100	5%	1/10W
R714	1-216-811-11	METAL CHIP	150	5%	1/10W
R715	1-216-811-11	METAL CHIP	150	5%	1/10W
R716	1-216-821-11	METAL CHIP	1K	5%	1/10W
R717	1-216-821-11	METAL CHIP	1K	5%	1/10W
R718	1-216-821-11	METAL CHIP	1K	5%	1/10W
R719	1-216-809-11	METAL CHIP	100	5%	1/10W
R720	1-216-809-11	METAL CHIP	100	5%	1/10W
R721	1-216-821-11	METAL CHIP	1K	5%	1/10W
R722	1-216-809-11	METAL CHIP	100	5%	1/10W
R723	1-216-809-11	METAL CHIP	100	5%	1/10W
R724	1-216-841-11	METAL CHIP	47K	5%	1/10W
R725	1-216-819-11	METAL CHIP	680	5%	1/10W
R726	1-216-819-11	METAL CHIP	680	5%	1/10W
R727	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R728	1-216-833-11	METAL CHIP	10K	5%	1/10W
R729	1-216-813-11	METAL CHIP	220	5%	1/10W
R730	1-216-821-11	METAL CHIP	1K	5%	1/10W
R731	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R732	1-216-841-11	METAL CHIP	47K	5%	1/10W
R741	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R743	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R744	1-216-845-11	METAL CHIP	100K	5%	1/10W
		< SWITCH >			
S701	1-571-936-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X701	1-781-801-21	VIBRATOR, CERAMIC (16.93MHz)			

****

*	1-683-853-11	CONTROL (1) BOARD			
		**********			
	3-831-441-11	CUSHION (B)			
		< CONNECTOR >			
CNP401	1-784-726-11	CONNECTOR, FFC 4P			
		< RESISTOR >			
R401	1-216-813-11	METAL CHIP	220	5%	1/10W
R402	1-216-817-11	METAL CHIP	470	5%	1/10W
R403	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S401	1-786-050-21	SWITCH, KEYBOARD (POWER)			
S402	1-786-050-21	SWITCH, KEYBOARD (SLEEP)			

****

*	1-683-854-11	CONTROL (2) BOARD			
		**********			
	1-824-035-11	CABLE, FLEXIBLE FLAT 4P (CNP402)			
	1-824-038-11	CABLE, FLEXIBLE FLAT 10P (CNP403)			
	1-824-039-11	CABLE, FLEXIBLE FLAT 9P (CNP404)			
		< RESISTOR >			
R404	1-216-821-11	METAL CHIP	1K	5%	1/10W
R405	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R406	1-216-821-11	METAL CHIP	1K	5%	1/10W
R407	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R408	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R409	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R410	1-216-833-11	METAL CHIP	10K	5%	1/10W
R411	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R412	1-216-813-11	METAL CHIP	220	5%	1/10W
R413	1-216-817-11	METAL CHIP	470	5%	1/10W
R414	1-216-821-11	METAL CHIP	1K	5%	1/10W
R415	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S403	1-786-050-21	SWITCH, KEYBOARD (I◄◄/TUNE –)			
S404	1-786-050-21	SWITCH, KEYBOARD (► II)			
S405	1-786-050-21	SWITCH, KEYBOARD (■)			
S406	1-786-050-21	SWITCH, KEYBOARD (►►I/TUNE +)			
S407	1-786-050-21	SWITCH, KEYBOARD (MODE)			
S408	1-786-050-21	SWITCH, KEYBOARD (DISPLAY•ENT•MEMORY)			
S409	1-786-050-21	SWITCH, KEYBOARD (CD)			
S410	1-786-050-21	SWITCH, KEYBOARD (TAPE)			
S411	1-786-050-21	SWITCH, KEYBOARD (RADIO BAND• AUTO PRESET)			

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*	1-683-855-11	CONTROL (3) BOARD			
		**********			
	3-831-441-11	CUSHION (B)			
		< CAPACITOR >			
C401	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C402	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C403	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C404	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNP405	1-784-731-11	CONNECTOR, FFC 9P			
		< DIODE >			
D401	6-500-199-01	LED BT-333D-31 (ROCK)			
D402	6-500-199-01	LED BT-333D-31 (POP)			
D403	6-500-199-01	LED BT-333D-31 (JAZZ)			
D404	6-500-199-01	LED BT-333D-31 (VOCAL)			

CONTROL (3) | CONTROL (4) | HEADPHONE | LCD

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q401	8-729-029-13	TRANSISTOR DTC143ZUA-T106			
Q402	8-729-029-13	TRANSISTOR DTC143ZUA-T106			
Q403	8-729-029-13	TRANSISTOR DTC143ZUA-T106			
Q404	8-729-029-13	TRANSISTOR DTC143ZUA-T106			
		< RESISTOR >			
R416	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R417	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R418	1-216-821-11	METAL CHIP	1K	5%	1/10W
R419	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R420	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W
R422	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R423	1-216-813-11	METAL CHIP	220	5%	1/10W
R424	1-216-817-11	METAL CHIP	470	5%	1/10W
R425	1-216-821-11	METAL CHIP	1K	5%	1/10W
R426	1-216-821-11	METAL CHIP	1K	5%	1/10W
R427	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R440	1-216-817-11	METAL CHIP	470	5%	1/10W
R441	1-216-817-11	METAL CHIP	470	5%	1/10W
R442	1-216-817-11	METAL CHIP	470	5%	1/10W
R449	1-216-817-11	METAL CHIP	470	5%	1/10W
		< SWITCH >			
S424	1-786-050-21	SWITCH, KEYBOARD (VOL –)			
S425	1-786-050-21	SWITCH, KEYBOARD (VOL +)			
S426	1-786-050-21	SWITCH, KEYBOARD (MEGA Xpand)			
S427	1-786-050-21	SWITCH, KEYBOARD (MEGA BASS)			
S428	1-786-050-21	SWITCH, KEYBOARD (ROCK (SOUND MODE))			
S429	1-786-050-21	SWITCH, KEYBOARD (POP (SOUND MODE))			
S430	1-786-050-21	SWITCH, KEYBOARD (JAZZ (SOUND MODE))			
S431	1-786-050-21	SWITCH, KEYBOARD (VOCAL (SOUND MODE))			
S432	1-786-050-21	SWITCH, KEYBOARD (FLAT (SOUND MODE))			
**********					
*	1-683-856-11	CONTROL (4) BOARD **********			
		< CAPACITOR >			
C405	1-162-974-11	CERAMIC CHIP	0.01uF		50V
		< IC >			
IC401	6-600-070-01	IC PIC-37041TE2			
		< CABLE HOLDER >			
KH402	1-824-030-11	HOLDER, CABLE 5P			
		< RESISTOR >			
R428	1-216-821-11	METAL CHIP	1K	5%	1/10W
R429	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R430	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R431	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R432	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R433	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R434	1-216-813-11	METAL CHIP	220	5%	1/10W
R435	1-216-817-11	METAL CHIP	470	5%	1/10W
R436	1-216-821-11	METAL CHIP	1K	5%	1/10W
R446	1-216-849-11	METAL CHIP	220K	5%	1/10W
R447	1-216-845-11	METAL CHIP	100K	5%	1/10W
R450	1-216-821-11	METAL CHIP	1K	5%	1/10W
R451	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R452	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R453	1-216-821-11	METAL CHIP	1K	5%	1/10W
R454	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R455	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R456	1-216-833-11	METAL CHIP	10K	5%	1/10W
R457	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
		< SWITCH >			
S412	1-786-050-21	SWITCH, KEYBOARD (>10)			
S413	1-786-050-21	SWITCH, KEYBOARD (0/10)			
S414	1-786-050-21	SWITCH, KEYBOARD (9)			
S416	1-786-050-21	SWITCH, KEYBOARD (6)			
S417	1-786-050-21	SWITCH, KEYBOARD (5)			
S418	1-786-050-21	SWITCH, KEYBOARD (4)			
S419	1-786-050-21	SWITCH, KEYBOARD (3)			
S420	1-786-050-21	SWITCH, KEYBOARD (2)			
S421	1-786-050-21	SWITCH, KEYBOARD (1)			
S422	1-786-050-21	SWITCH, KEYBOARD (7)			
S423	1-786-050-21	SWITCH, KEYBOARD (8)			
**********					
*	1-683-858-11	HEADPHONE BOARD **********			
		< CONNECTOR >			
* CNP322	1-815-444-11	PIN, CONNECTOR 3P			
CNP323	1-815-445-11	PIN, CONNECTOR 4P			
		< JACK >			
J321	1-815-325-11	JACK (🎧)			
		< RESISTOR >			
R132	1-216-809-11	METAL CHIP	100	5%	1/10W
R232	1-216-809-11	METAL CHIP	100	5%	1/10W
**********					
*	1-683-857-11	LCD BOARD **********			
	1-824-037-11	CABLE, FLEXIBLE FLAT 27P (CNP406)			
	3-237-717-01	HOLDER, LCD			
		< DIODE >			
D405	6-500-198-01	LED BT-233D-31 (OPR/BATT)			
		< CABLE HOLDER >			
KH401	1-824-030-11	HOLDER, CABLE 5P			

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-804-550-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< RESISTOR >			
R437	1-216-821-11	METAL CHIP	1K	5%	1/10W
R438	1-216-821-11	METAL CHIP	1K	5%	1/10W
R439	1-216-821-11	METAL CHIP	1K	5%	1/10W
R443	1-216-821-11	METAL CHIP	1K	5%	1/10W
R444	1-216-821-11	METAL CHIP	1K	5%	1/10W
R445	1-216-821-11	METAL CHIP	1K	5%	1/10W
R448	1-216-813-11	METAL CHIP	220	5%	1/10W
**********					
*	A-3178-147-A	MAIN BOARD, COMPLETE (US)			
*	A-3178-445-A	MAIN BOARD, COMPLETE (CND)			
*	A-3178-512-A	MAIN BOARD, COMPLETE (E92,MX)			
*	A-3178-773-A	MAIN BOARD, COMPLETE (SP)			
*	A-3323-945-A	MAIN BOARD, COMPLETE (KR)			
		**********			
	7-685-646-79	SCREW, TAPPING +BV 3X8			
		< CAPACITOR >			
C106	1-126-960-11	ELECT	1uF	20%	50V
C122	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C125	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C126	1-126-960-11	ELECT	1uF	20%	50V
C128	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C129	1-126-947-11	ELECT	47uF	20%	10V
C130	1-104-665-11	ELECT	100uF	20%	10V
C131	1-126-926-11	ELECT	1000uF	20%	10V
C132	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C133	1-126-963-11	ELECT	4.7uF	20%	50V
C135	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C139	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C146	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C147	1-126-963-11	ELECT	4.7uF	20%	50V
C148	1-115-156-11	CERAMIC CHIP	1uF		10V
C150	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C171	1-126-964-11	ELECT	10uF	20%	50V
C206	1-126-960-11	ELECT	1uF	20%	50V
C222	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C225	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C226	1-126-960-11	ELECT	1uF	20%	50V
C228	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C229	1-126-947-11	ELECT	47uF	20%	10V
C230	1-104-665-11	ELECT	100uF	20%	10V
C231	1-126-926-11	ELECT	1000uF	20%	10V
C232	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C233	1-126-963-11	ELECT	4.7uF	20%	50V
C235	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C239	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C246	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C247	1-126-963-11	ELECT	4.7uF	20%	50V
C248	1-115-156-11	CERAMIC CHIP	1uF		10V
C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C271	1-126-964-11	ELECT	10uF	20%	50V
C321	1-104-665-11	ELECT	100uF	20%	10V
C322	1-126-947-11	ELECT	47uF	20%	10V
C323	1-126-964-11	ELECT	10uF	20%	50V
C324	1-162-245-11	CERAMIC CHIP	0.015uF	10%	25V
C325	1-126-937-11	ELECT	4700uF	20%	16V
C326	1-126-934-11	ELECT	220uF	20%	16V
C327	1-126-947-11	ELECT	47uF	20%	10V
C328	1-126-959-11	ELECT	0.47uF	20%	50V
C329	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C331	1-126-947-11	ELECT	47uF	20%	10V
C350	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C352	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C800	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C801	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C802	1-104-665-11	ELECT	100uF	20%	10V
C803	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C804	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C805	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C806	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C807	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C808	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C809	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C810	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C811	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C812	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C813	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C814	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C815	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C816	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C817	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C818	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C819	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C820	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C821	1-115-156-11	CERAMIC CHIP	1uF		10V
C822	1-126-934-11	ELECT	220uF	20%	10V
C824	1-115-156-11	CERAMIC CHIP	1uF		10V
C825	1-126-964-11	ELECT	10uF	20%	50V
C830	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C831	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C832	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C839	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C951	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C952	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C953	1-126-935-11	ELECT	470uF	20%	10V
C957	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C959	1-104-665-11	ELECT	100uF	20%	10V
C960	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNP302	1-815-445-11	PIN, CONNECTOR 4P			
CNP802	1-695-371-31	CONNECTOR, FFC 10P			
CNP803	1-784-788-11	CONNECTOR, FFC 27P			
CNP804	1-784-775-11	CONNECTOR, FFC 14P			
CNP806	1-784-774-11	CONNECTOR, FFC 13P			

MAIN

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D322	8-719-988-61	DIODE 1SS355TE-17	
D323	8-719-988-61	DIODE 1SS355TE-17	
D324	8-719-988-61	DIODE 1SS355TE-17	
D801	8-719-069-54	DIODE UDZS-TE-17-5.1B	
D802	8-719-082-07	DIODE KDS121-RTK	
D804	8-719-082-07	DIODE KDS121-RTK	
D807	8-719-083-93	DIODE KDS120-RTK	
D951	8-719-083-93	DIODE KDS120-RTK (SP,KR)	
D953	8-719-978-33	DIODE DTZ-TT11-6.8B	
D957	8-719-083-58	DIODE UDZS-TE-17-3.9B	
		< IC >	
IC303	6-701-824-11	IC BD3870FS-E2	
IC304	8-759-426-51	IC BA5417	
IC801	8-759-658-46	IC S-81233SGY-Z	
IC802	6-801-838-01	IC uPD789477GC-A14-8BT	
IC803	6-700-336-01	IC CAT24WC02JI-1.8-TE13	
IC804	8-759-645-87	IC PST9128-T	
		< JUMPER RESISTOR >	
JC301	1-216-864-11	METAL CHIP 0 5% 1/10W (US,CND,E92,MX)	
JC302	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC303	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC304	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC305	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC306	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC307	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC308	1-216-864-11	METAL CHIP 0 5% 1/10W	
JC309	1-216-864-11	METAL CHIP 0 5% 1/10W	
		< CABLE HOLDER >	
KH301	1-824-027-11	HOLDER, CABLE 3P	
KH321	1-824-029-11	HOLDER, CABLE 4P	
KH803	1-824-028-11	HOLDER, CABLE 2P	
		< COIL >	
L301	1-410-324-11	INDUCTOR 4.7uH	
L801	1-414-137-31	INDUCTOR 0.22uH	
L802	1-410-521-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q122	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q124	8-729-029-10	TRANSISTOR DTC143TUA-T106	
Q222	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q224	8-729-029-10	TRANSISTOR DTC143TUA-T106	
Q801	8-729-029-16	TRANSISTOR DTC144VUA-T106	
Q804	8-729-028-77	TRANSISTOR DTA115EUA-T106	
Q806	8-729-028-77	TRANSISTOR DTA115EUA-T106	
Q808	8-729-028-99	TRANSISTOR DTC114YUA-T106	
Q812	8-729-028-92	TRANSISTOR DTA144TUA-T106	
Q813	8-729-028-99	TRANSISTOR DTC114YUA-T106	
Q814	8-729-028-99	TRANSISTOR DTC114YUA-T106	
Q819	8-729-029-00	TRANSISTOR DTC115EUA-T106	

Ref. No.	Part No.	Description	Remark
Q951	8-729-029-13	TRANSISTOR DTC143ZUA-T106 (SP,KR)	
Q952	8-729-040-76	TRANSISTOR KTA1273-Y-AT	
Q953	8-729-029-13	TRANSISTOR DTC143ZUA-T106	
Q955	8-729-021-82	TRANSISTOR 2SD2396K	
Q957	8-729-212-02	TRANSISTOR 2SC2120-Y	
Q958	8-729-028-90	TRANSISTOR DTA143ZUA-T106	
Q959	8-729-028-99	TRANSISTOR DTC114YUA-T106	
		< RESISTOR >	
R125	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R127	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R128	1-216-817-11	METAL CHIP 470 5% 1/10W	
R130	1-216-813-11	METAL CHIP 220 5% 1/10W	
R131	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R133	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R135	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R140	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R144	1-216-789-11	METAL CHIP 2.2 5% 1/10W	
R148	1-216-813-11	METAL CHIP 220 5% 1/10W	
R149	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R150	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R225	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R227	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R228	1-216-817-11	METAL CHIP 470 5% 1/10W	
R230	1-216-813-11	METAL CHIP 220 5% 1/10W	
R231	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R233	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R235	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R240	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R244	1-216-789-11	METAL CHIP 2.2 5% 1/10W	
R248	1-216-813-11	METAL CHIP 220 5% 1/10W	
R249	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R250	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R322	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R323	1-216-857-11	METAL CHIP 1M 5% 1/10W	
R324	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R325	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R326	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R331	1-216-809-11	METAL CHIP 100 5% 1/10W	
R332	1-216-809-11	METAL CHIP 100 5% 1/10W	
R333	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R334	1-216-805-11	METAL CHIP 47 5% 1/10W	
R335	1-216-809-11	METAL CHIP 100 5% 1/10W	
R360	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R361	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R362	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R363	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R802	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R803	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R804	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R805	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R806	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R807	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R808	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R809	1-216-833-11	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R810	1-216-845-11	METAL CHIP	100K	5%	1/10W
R811	1-216-849-11	METAL CHIP	220K	5%	1/10W
R812	1-216-845-11	METAL CHIP	100K	5%	1/10W
R813	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R814	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R815	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R816	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R817	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R818	1-216-821-11	METAL CHIP	1K	5%	1/10W
R819	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R820	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (SP)
R820	1-216-833-11	METAL CHIP	10K	5%	1/10W (KR)
R820	1-216-864-11	METAL CHIP	0	5%	1/10W (US,CND,E92,MX)
R821	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R822	1-216-817-11	METAL CHIP	470	5%	1/10W (SP)
R822	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (KR)
R822	1-216-864-11	METAL CHIP	0	5%	1/10W (US,CND,E92,MX)
R823	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R824	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R825	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R826	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R827	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R828	1-216-821-11	METAL CHIP	1K	5%	1/10W
R829	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R830	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R831	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R832	1-216-841-11	METAL CHIP	47K	5%	1/10W
R833	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R834	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R835	1-216-841-11	METAL CHIP	47K	5%	1/10W
R836	1-216-841-11	METAL CHIP	47K	5%	1/10W
R837	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R838	1-216-837-11	METAL CHIP	22K	5%	1/10W
R839	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R842	1-216-821-11	METAL CHIP	1K	5%	1/10W
R843	1-216-821-11	METAL CHIP	1K	5%	1/10W
R844	1-216-833-11	METAL CHIP	10K	5%	1/10W
R845	1-216-841-11	METAL CHIP	47K	5%	1/10W
R846	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R847	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R848	1-216-821-11	METAL CHIP	1K	5%	1/10W
R849	1-216-841-11	METAL CHIP	47K	5%	1/10W
R850	1-216-821-11	METAL CHIP	1K	5%	1/10W
R851	1-216-813-11	METAL CHIP	220	5%	1/10W
R852	1-216-813-11	METAL CHIP	220	5%	1/10W
R853	1-216-813-11	METAL CHIP	220	5%	1/10W
R854	1-216-841-11	METAL CHIP	47K	5%	1/10W
R855	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R856	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R857	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R858	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R859	1-216-821-11	METAL CHIP	1K	5%	1/10W
R860	1-216-841-11	METAL CHIP	47K	5%	1/10W
R861	1-216-821-11	METAL CHIP	1K	5%	1/10W
R862	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R863	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R864	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R865	1-216-841-11	METAL CHIP	47K	5%	1/10W
R866	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R867	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R870	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R876	1-216-845-11	METAL CHIP	100K	5%	1/10W
R877	1-216-845-11	METAL CHIP	100K	5%	1/10W
R880	1-216-821-11	METAL CHIP	1K	5%	1/10W
R881	1-216-821-11	METAL CHIP	1K	5%	1/10W
R882	1-216-821-11	METAL CHIP	1K	5%	1/10W
R883	1-216-821-11	METAL CHIP	1K	5%	1/10W
R884	1-216-821-11	METAL CHIP	1K	5%	1/10W
R885	1-216-821-11	METAL CHIP	1K	5%	1/10W
R886	1-216-821-11	METAL CHIP	1K	5%	1/10W
R887	1-216-821-11	METAL CHIP	1K	5%	1/10W
R888	1-216-821-11	METAL CHIP	1K	5%	1/10W
R889	1-216-821-11	METAL CHIP	1K	5%	1/10W
R890	1-216-821-11	METAL CHIP	1K	5%	1/10W
R891	1-216-821-11	METAL CHIP	1K	5%	1/10W
R892	1-216-821-11	METAL CHIP	1K	5%	1/10W
R893	1-216-821-11	METAL CHIP	1K	5%	1/10W
R894	1-216-821-11	METAL CHIP	1K	5%	1/10W
R895	1-216-821-11	METAL CHIP	1K	5%	1/10W
R896	1-216-821-11	METAL CHIP	1K	5%	1/10W
R897	1-216-821-11	METAL CHIP	1K	5%	1/10W
R898	1-216-821-11	METAL CHIP	1K	5%	1/10W
R899	1-216-821-11	METAL CHIP	1K	5%	1/10W
R951	1-216-841-11	METAL CHIP	47K	5%	1/10W
R952	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R953	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R954	1-216-821-11	METAL CHIP	1K	5%	1/10W
R955	1-216-821-11	METAL CHIP	1K	5%	1/10W
R956	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R957	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R958	1-216-813-11	METAL CHIP	220	5%	1/10W
R959	1-216-809-11	METAL CHIP	100	5%	1/10W
R960	1-216-864-11	METAL CHIP	0	5%	1/10W

< VIBRATOR >

X801	1-795-267-11	VIBRATOR, CRYSTAL (32.768kHz)
X802	1-781-775-21	VIBRATOR, CERAMIC (4.19MHz)

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POWER **TC**

Ref. No.	Part No.	Description			Remark
*	1-683-861-11	POWER BOARD			
		**********			
	1-533-233-11	HOLDER, FUSE (CND,SP,KR)			
		< CAPACITOR >			
C901	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C902	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C903	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C904	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C906	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CNP901	1-815-551-11	PIN, CONNECTOR (PC BOARD) 3P			
* CNP902	1-815-552-21	PIN, CONNECTOR (PC BOARD) 4P			
		< DIODE >			
D901	8-719-063-79	DIODE 1N4002B			
D902	8-719-063-79	DIODE 1N4002B			
D903	8-719-063-79	DIODE 1N4002B			
D904	8-719-063-79	DIODE 1N4002B			
		< FUSE >			
⚠F902	1-533-469-21	FUSE, GLASS TUBE (DIA.5) (T2.5AL/250V)			(SP,KR)
⚠F902	1-533-470-11	FUSE, GLASS TUBE (DIA.5) (3.15A/125V)			(CND)
		< AC INLET >			
⚠J901	1-526-818-11	INLET, AC (～ AC IN) (E92,MX)			
⚠J901	1-526-838-11	INLET, AC 2P (～ AC IN) (SP,KR)			
⚠J901	1-540-009-11	INLET, AC (～ AC IN) (US,CND)			
		< TRANSFORMER >			
⚠T901	1-435-917-11	TRANSFORMER, POWER (US,E92,MX)			
⚠T901	1-435-918-11	TRANSFORMER, POWER (SP,KR)			
⚠T901	1-437-540-11	TRANSFORMER, POWER (CND)			
**********					
*	A-3323-806-A	TC BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-104-665-11	ELECT	100uF	20%	10V
C103	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C104	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C105	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C107	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-104-665-11	ELECT	100uF	20%	10V
C203	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C204	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C205	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C207	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C301	1-104-665-11	ELECT	100uF	20%	10V
C302	1-104-665-11	ELECT	100uF	20%	10V
C303	1-104-665-11	ELECT	100uF	20%	10V
C304	1-126-947-11	ELECT	47uF	20%	10V
C305	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C308	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C310	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
		< CONNECTOR >			
CN303	1-784-774-11	CONNECTOR, FFC 13P			
		< IC >			
IC301	8-759-264-71	IC TA2068N			
		< JUMPER RESISTOR >			
JC301	1-216-864-11	METAL CHIP	0	5%	1/10W
JC302	1-216-864-11	METAL CHIP	0	5%	1/10W
JC303	1-216-864-11	METAL CHIP	0	5%	1/10W
JC304	1-216-864-11	METAL CHIP	0	5%	1/10W
JC305	1-216-864-11	METAL CHIP	0	5%	1/10W
JC306	1-216-295-11	SHORT CHIP	0		
JC307	1-216-864-11	METAL CHIP	0	5%	1/10W
JC308	1-216-295-11	SHORT CHIP	0		
JC309	1-216-864-11	METAL CHIP	0	5%	1/10W
		< TRANSISTOR >			
Q301	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R		
Q302	8-729-907-00	TRANSISTOR	DTC114EU		
Q303	8-729-907-00	TRANSISTOR	DTC114EU		
		< RESISTOR >			
R101	1-216-835-11	METAL CHIP	15K	5%	1/10W
R102	1-216-807-11	METAL CHIP	68	5%	1/10W
R103	1-216-843-11	METAL CHIP	68K	5%	1/10W
R104	1-216-835-11	METAL CHIP	15K	5%	1/10W
R105	1-216-835-11	METAL CHIP	15K	5%	1/10W
R106	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R110	1-216-809-11	METAL CHIP	100	5%	1/10W
R111	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R112	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R201	1-216-835-11	METAL CHIP	15K	5%	1/10W
R202	1-216-807-11	METAL CHIP	68	5%	1/10W
R203	1-216-843-11	METAL CHIP	68K	5%	1/10W
R204	1-216-835-11	METAL CHIP	15K	5%	1/10W
R205	1-216-835-11	METAL CHIP	15K	5%	1/10W
R206	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R210	1-216-025-11	RES-CHIP	100	5%	1/10W
R211	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R212	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R301	1-216-857-11	METAL CHIP	1M	5%	1/10W
R302	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R303	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R304	1-216-821-11	METAL CHIP	1K	5%	1/10W
R305	1-216-817-11	METAL CHIP	470	5%	1/10W
R306	1-218-867-11	RES-CHIP	6.8K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
R307	1-216-797-11	METAL CHIP	10	5%	1/10W
R308	1-216-837-11	METAL CHIP	22K	5%	1/10W
R309	1-216-805-11	METAL CHIP	47	5%	1/10W
R310	1-216-857-11	METAL CHIP	1M	5%	1/10W
R311	1-216-857-11	METAL CHIP	1M	5%	1/10W
R314	1-216-817-11	METAL CHIP	470	5%	1/10W
R315	1-216-817-11	METAL CHIP	470	5%	1/10W
		< SWITCH >			
S301	1-786-126-11	SWITCH, SLIDE (REC/PB)			
		< TRANSFORMER >			
T301	1-416-041-11	TRANSFORMER, BIAS OSCILLATION			
**********					
*	A-3323-778-A	TUNER BOARD, COMPLETE (US,CND,E92,MX)			
*	A-3323-815-A	TUNER BOARD, COMPLETE (SP,KR)			
		**********			
	3-237-724-01	TERMINAL, ANTENNA (CNP2)			
		< CAPACITOR >			
C1	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C4	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C7	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C8	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C9	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C10	1-126-960-11	ELECT	1uF	20%	50V
C11	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C12	1-126-963-11	ELECT	4.7uF	20%	50V
C13	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (US,CND,E92,MX)
C14	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (SP,KR)
C14	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND,E92,MX)
C15	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (SP,KR)
C15	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (US,CND,E92,MX)
C18	1-126-934-11	ELECT	220uF	20%	10V
C20	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C21	1-126-960-11	ELECT	1uF	20%	50V
C22	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C23	1-126-960-11	ELECT	1uF	20%	50V
C24	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C26	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C27	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C29	1-104-665-11	ELECT	100uF	20%	10V
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C31	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C32	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C33	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C39	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

Ref. No.	Part No.	Description			Remark
C41	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C42	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C43	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C47	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C49	1-161-051-00	CERAMIC	0.01uF	10%	50V
C51	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C52	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C53	1-136-169-00	FILM	0.22uF	5%	50V
C54	1-126-934-11	ELECT	220uF	20%	10V
C55	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C56	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C57	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C59	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C60	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C61	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C62	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C63	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C65	1-126-963-11	ELECT	4.7uF	20%	50V
C66	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C68	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C77	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V (SP,KR)
C78	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V (SP,KR)
C80	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C95	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< FILTER >			
CF2	1-760-023-11	FILTER, CERAMIC			
CF4	1-781-962-21	FILTER, CERAMIC			
		< CONNECTOR >			
* CNP1	1-785-663-11	PIN, CONNECTOR (PC BOARD) 11P			
		< TRIMMER >			
CT1	1-141-603-11	CAP, ADJ	20PF		
CT3	1-141-601-11	CAP, ADJ	10PF		
		< DIODE >			
D1	8-719-078-48	DIODE KV1471ETR1-3			
D2	8-719-078-48	DIODE KV1471ETR1-3			
D3	8-719-050-69	DIODE KV1520N			
D10	8-719-988-61	DIODE 1SS355TE-17			
D11	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC1	6-700-512-01	IC TA2149BN			
IC2	8-759-483-40	IC LC72137M-TLM			
		< JUMPER RESISTOR >			
JC1	1-216-864-11	METAL CHIP	0	5%	1/10W
JC2	1-216-864-11	METAL CHIP	0	5%	1/10W
JC3	1-216-864-11	METAL CHIP	0	5%	1/10W
JC4	1-216-864-11	METAL CHIP	0	5%	1/10W
JC5	1-216-864-11	METAL CHIP	0	5%	1/10W

TUNER

Ref. No.	Part No.	Description			Remark
JC6	1-216-864-11	METAL CHIP	0	5%	1/10W
JC11	1-216-864-11	METAL CHIP	0	5%	1/10W
JC12	1-216-864-11	METAL CHIP	0	5%	1/10W
JC13	1-216-864-11	METAL CHIP	0	5%	1/10W
JC24	1-216-864-11	METAL CHIP	0	5%	1/10W (SP,KR)
JC33	1-216-864-11	METAL CHIP	0	5%	1/10W
JC34	1-216-864-11	METAL CHIP	0	5%	1/10W
		< COIL >			
L1	1-409-775-11	COIL, AIR-CORE			
L2	1-416-509-11	COIL, AIR-CORE			
L3	1-754-117-11	ANTENNA, FERRITE-ROD (AM)			
L4	1-411-234-21	COIL, AM OSC			
L11	1-414-142-11	INDUCTOR	1uH (US,CND,E92,MX)		
L21	1-410-509-61	INDUCTOR	10uH		
		< RESISTOR >			
R1	1-216-815-11	METAL CHIP	330	5%	1/10W
R2	1-216-817-11	METAL CHIP	470	5%	1/10W
R3	1-216-833-11	METAL CHIP	10K	5%	1/10W
R4	1-216-833-11	METAL CHIP	10K	5%	1/10W
R10	1-216-805-11	METAL CHIP	47	5%	1/10W
R11	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R13	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R24	1-216-813-11	METAL CHIP	220	5%	1/10W
R30	1-216-835-11	METAL CHIP	15K	5%	1/10W
R31	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R32	1-216-845-11	METAL CHIP	100K	5%	1/10W
R40	1-216-849-11	METAL CHIP	220K	5%	1/10W
R41	1-216-833-11	METAL CHIP	10K	5%	1/10W
R50	1-216-821-11	METAL CHIP	1K	5%	1/10W
R51	1-216-833-11	METAL CHIP	10K	5%	1/10W
R52	1-216-864-11	METAL CHIP	0	5%	1/10W
R53	1-216-835-11	METAL CHIP	15K	5%	1/10W
R54	1-216-817-11	METAL CHIP	470	5%	1/10W
R56	1-216-815-11	METAL CHIP	330	5%	1/10W
R58	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R59	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R60	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R61	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R63	1-216-833-11	METAL CHIP	10K	5%	1/10W
R65	1-216-833-11	METAL CHIP	10K	5%	1/10W
R91	1-216-813-11	METAL CHIP	220	5%	1/10W
R92	1-216-813-11	METAL CHIP	220	5%	1/10W
R94	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< TRANSFORMER >			
T1	1-433-741-11	TRANSFORMER, IF			
T2	1-419-465-11	COIL (DET)			
		< VIBRATOR >			
X1	1-795-449-11	VIBRATOR, CRYSTAL (75kHz)			

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
109	1-452-899-11	MAGNET	
118	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)	
119	1-824-034-11	CABLE, FLEXIBLE FLAT 14P	
164	1-824-031-11	CABLE, FLEXIBLE FLAT 13P	
⚠253	8-820-161-02	PICK-UP, OPTICAL KSS-213R/C2RP	
ANT1	1-754-241-11	ANTENNA, TELESCOPIC (FM)	
HRP301	3-244-085-01	HEAD, R/P (REC/PB)	
M801	3-244-082-01	MOTOR ASSY (CAPSTAN/REEL)	
S801	1-692-960-11	SWITCH, PUSH (1 KEY)	(⏏ PUSH OPEN/CLOSE)
SP301	1-825-031-11	SPEAKER (10cm) (L-CH)	
SP302	1-825-031-11	SPEAKER (10cm) (R-CH)	

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Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	1-542-489-11	HEADPHONE (S500)	
⚠	1-557-287-11	CORD, POWER (E92,MX)	
⚠	1-575-131-11	CORD, POWER (SP)	
⚠	1-690-952-11	CORD, POWER (CND)	
⚠	1-776-985-11	CORD, POWER (KR)	
⚠	1-782-126-11	CORD, POWER (US)	
	3-027-153-11	LID, BATTERY CASE (for RMT-CS400A)	
	3-238-274-11	MANUAL, INSTRUCTION (ENGLISH)	(US,CND,E92,MX)
	3-238-274-21	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-238-274-31	MANUAL, INSTRUCTION (SPANISH) (E92,MX)	
	3-238-274-41	MANUAL, INSTRUCTION (ENGLISH,SPANISH)	(SP,KR)
	3-240-554-31	MANUAL, INSTRUCTION (KOREAN) (KR)	
	A-3013-974-A	REMOTE COMMANDER (RMT-CS400A)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

CFD-S400/S500

SONY

SERVICE MANUAL

Ver 1.2 2004. 09

US Model
CFD-S500
Canadian Model
E Model
CFD-S400

SUPPLEMENT-1

File this supplement with the service manual.

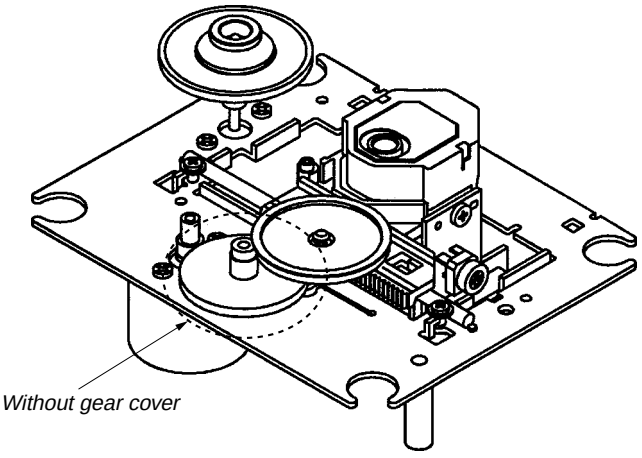
Subject: Change of CD Mechanism Block (KSM-213RDP→KSM-213CDP)

(SPM-04041)

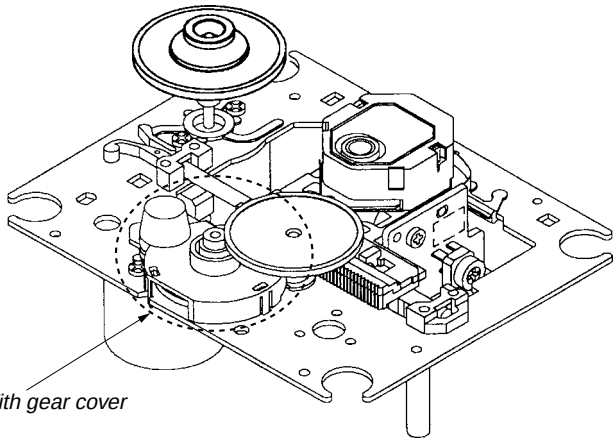
CD mechanism block is changed from KSM-213RDP to KSM-213CDP in the midway of production.
In performing the replacing of CD mechanism block, be sure to check which CD mechanism block is used, according to the following identification.
SUPPLEMENT-1 has indicated only the information of KSM-213CDP.

IDENTIFICATION

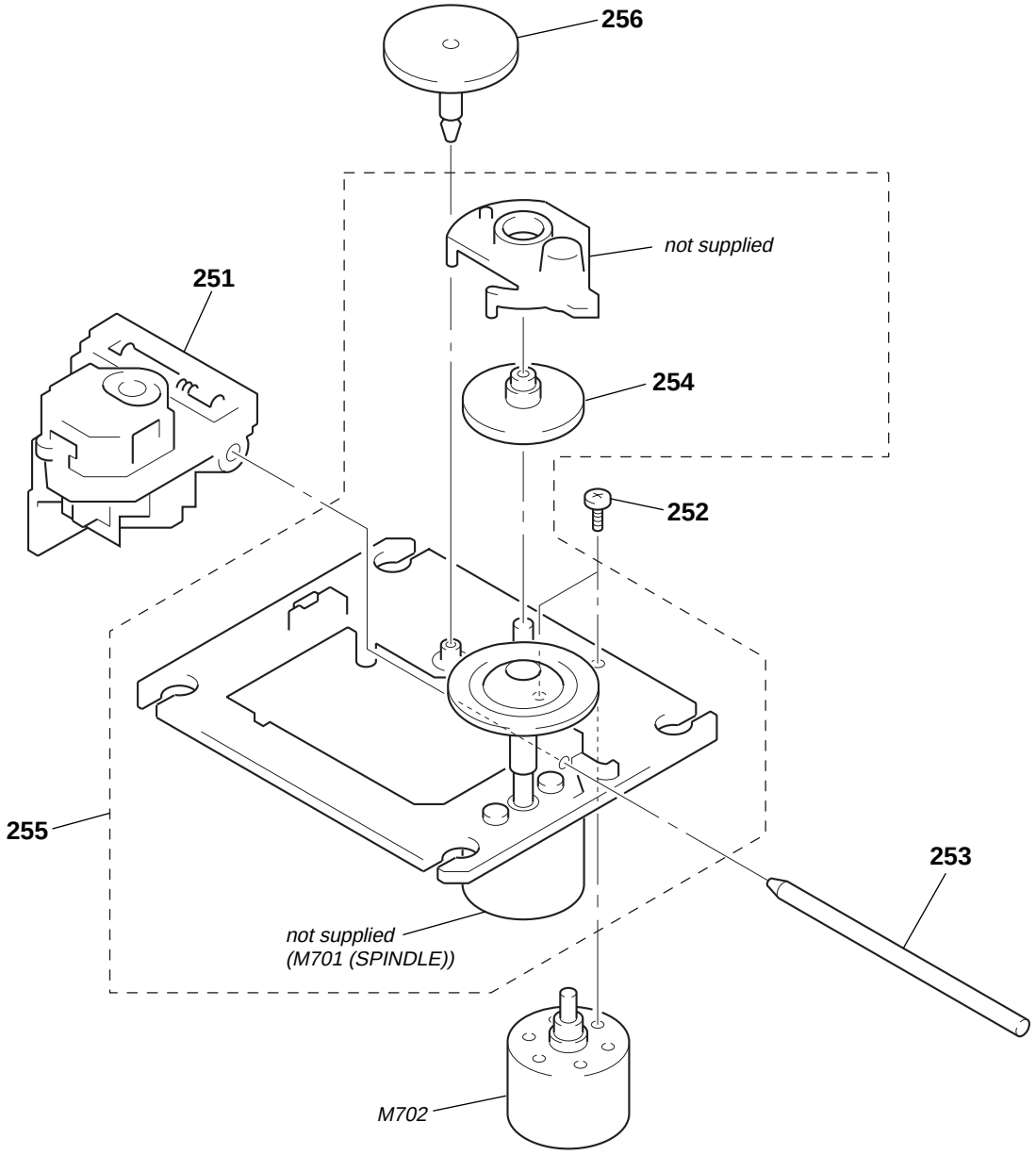
KSM-213RDP



KSM-213CDP



CD MECHANISM SECTION
(KSM-213CDP)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠251	8-848-483-12	OPTICAL PICK-UP (KSS-213C/C2RP1)	
252	2-174-500-01	SCREW (2X3)	
253	2-626-908-01	SHAFT, SLED	
254	2-627-003-01	GEAR (B) (RP)	
255	X-2162-709-2	CHASSIS ASSY (CDP), MOTOR (including M701 (SPINDLE))	
256	2-626-907-11	GEAR (A)	
M702	X-2625-769-1	GEAR ASSY (MB) (RP), MOTOR (SLED)	

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.04	New
1.1	2002.07	Repair parts change of CD mechanism. (SPM-02027)
1.2	2004.09	Change of CD Mechanism. (SPM-04041)
1.3	2005.09	Change of part number of power cord of US model. (SPM-05132)